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PETROLEUM.

PETROLEUM—SOME OF ITS USES.

We speak of petroleum as a "lubricator," as an "illuminator," as "fuel," as a "generator of steam," and as a medicine. We find that in the course of but four weeks it has doubled its sphere of value, or rather has been applied with perfect success to the following new uses:

First. It is coming to be universally employed by tanners, after the naptha has been extracted from it, as a substitute for fish oil, and the leather thus prepared is found to be even better than that tanned the old way. The naptha so procured can then be used as a substitute of alchohol and other medical compounds. It is said to be the best solvent for India Rubber known, and with a rubber, varnish, for leather rendering the latter water proof, can be made.

The heavy oil strained in a cold room yields the paraffine which is employed to adulterate and cheapen spermaceti, bees-wax, etc, and for making candles. Our fair dames and demoiselles will be no little astonished, also, to learn that eighty tuns are used in this country as mastic, which they buy in our candy stores, and chew in little perfumed yellow and rose colored sticks.

Again the most exquisite dyes are obtained from this, among them the new and beautiful 'girofla,' surpassing all that Tyre and Persia ever owned.

Our self rising flour derives its most distinctive quality from this multiful and wonderful substance, since the waste acid which runs from the petroleum refineries is largely applied to the imitation and adulteration of cream of tartar which is the lighter of bread!

But the press owe a direct debt that must be now acknowledged to this good genius from the depth of the earth. An American chemist has recently taken out a patent for making printing inks from the various colors and extracts of petroleum; and the black ink he thus manufactures is better than that made of linseed oil, and can be sold for half the latter! Some of our great publishing houses are even now constantly using it, and this very article may be printed with the pigment; the consumption of the compound already amounts to hundreds of tuns.

A large and celebrated firm is now making a delightful petroleum causmetic soap, and the best family soap from the same oil.

Within cannon shot of that establishment is another where gas is made and furnished from petroleum at the rate of 1,55 per 1,000 feet, and it yields the brightest and purest light, and most powerful heat yet known for domestic purposes.

VERY ANCIENT WELLS—HAS AN EXTINCT RACE EVER PROSPECTED FOR OIL!—WHO FIRST DISCOVERED OIL—A LEAF FROM ITS EARLY HISTORY.

A contemporary publishes some strange facts concerning discoveries made at the sinking of the first oil wells in our State which are very curious, if true. The first oil well in our State was struck August 28th, 1859. The first vein was struck at a depth of sixty-nine feet four inches. During the examination which preceded the sinking of this well some extraordinary discoveries were made, which, it is believed, have never before been alluded to in print. Numerous pits were found, distributed all along on Oil Creek, of the following character: The pitts were from fifteen to twenty feet in depth and from five to eight feet in diameter, and carefully walled around their sides with jointed wooden beams, which the petroleum in the soil had completely preserved from decay. It was evident at once that this joiner work could not have been done by Indians. Inquiry among the Cornplanter Indians, in the vicinity, developed the fact that a tradition existed in the tribe to the effect that another and a different race had long ago inhabited the soil and dug these pits for the oil that even yet collected in them. This race may be identified with that supposed to have built the Western mounds.

This race seems to have had a good deal more of what Hoosiers call "gumption" than the salt hunters who, forty years ago, explored Westmoreland county for oil. They labored industriously, but they struck a dark, offensively-smelling substance, and gave up their work in disgust. Subsequently the construction of the State Canal covered up the wells, but the oil continued to ooze up and flow off. At the present time, when petroleum is all the rage, these abandoned wells have been hunted up again, and the land has become valuable for its flowing wells.

While speaking of these early evidences of the oil wealth of our State, it is well to know who it was that first applied the oil to any use, and thus developed it, and added to the wealth of our State. The Pittsburg Commercial, in examining into the subject, says that about the year 1849 Mr. S. M. Kier, of that city, discovered oil coming up from one of his salt wells near Tarentum, on the Alleghany river. After a time it accumulated in the receiving tank to such an extent as to be troublesome; and not knowing what use to make of it, he let it run away. Oil was discovered about the same time coming up from another salt well (Mr. Peterson's) in the same neighborhood. About six months after the discovery Mr. Kier conceived the idea of putting it up as a medicine, and to prevent competition, purchased also the oil from Mr. Peterson's well for five years. Some of the oil was then disposed of, but Mr. K. found, in the course of a few months, that he could not thus use all the oils the wells were producing, and did not know what to do with the surplus. He sent a portion of it to Philadelphia to Prof. Booth, to have it analyzed, in hopes of finding some other use for it. The result of the analysis was a suggestion that it would make a splendid illuminating oil, if a suitable lamp were made for it. Mr. Kier put up a small refinery, had lamps made by two mechanics of this city, and the result was, that a cheap and admirable illuminator was found. The wells did not yield sufficiently to meet the demand, and ready sale was made of all the product from 1850 to 1855. In 1854 Messrs. Evelett and Bissell made their discovery. In 1859, the firm sent out Captain Drake, who bored the first well. Before commencing his operations, Mr. Drake went to Mr. Kier's wells on the Allegheny, examined them, and hired a blacksmith, who was then working for Mr. Kier, to go and bore for him. The result is well known. Mr. Drake "struck oil" at about seventy feet, from which dates the great oil excitement of the day. But it may not be known that Mr. Kier bought the first oil that came from Mr. Drake's well, and refined it at his refinery. From these facts it would seem that Mr. Kier, of our own good Commonwealth, prompted and assisted by Prof. Booth, also of our State refined and used refined petroleum, as an illuminator, for four or five years before the first well was suuk on Oil Creek.

PETROLEUM—WHAT IT IS—HOW IT IS REFINED.

An Eastern exchange furnishes the following interesting facts about "coal oil": While so many are excited over the hopes of a sudden fortune from petroleum discoveries, it is of some interest to learn how the crude product of the wells is prepared for use, and the purposes to which the different substances into which it is separated are applied. Petroleum as it is raised from the rocky cavities in which it is found, is a dark and dusky liquid, disagreeable to the eye and offensive to smell and touch. But fortunately a simple process of refining give us from this foul substance a beautiful and transparent illuminating oil; a perfect substitute for spirits of turpentine; an excellent lubricating substance, materials for the manufacture of gas, and of the most beautiful dyes. It is known that petroleum is composed of two elements—hydrogen and carbon. These two elements combine together chemically to form a large number of chemical compounds, which are mechanically mixed together to constitute petroleum. These hydro-carbons have one property; they are all combustible. But their other properties vary very widely; some are gases, others are liquids and one at least is a solid almost as hard as lead. As the solids, and to some extent the gases, are soluble in the liquids, the whole mass is liquid. The volatility of the several hydro-carbons which constitute petroleum is the first property which is considered in the effort to separate them. An oil can be obtained which will boil at 90 degrees; another which will boil at 91 degrees, and another at 92 degrees. Even these are found, however, to be not single chemical compounds, but several hydro-carbons mechanically mingled. Petroleum is distilled in iron boilers, usually holding about fifty barrels each. They are heated by a coal furnace, and the products of distillation are condensed in the usual way by means of worms immersed in cold water. As the oil flows from the condenser it is divided into three portions for different uses. The lightest, that comes over first, is called gasolene. This cannot be used in lamps with safety, as it rises in vapor so freely that it mixes with the atmospheric air to form an explosive compound. It is employed to some extent for making an illuminating gas by mixing its vapors with air. Its specific gravity ranges from 80 to 90 degrees of Beaume's scale. The next that comes over, ranging from 60 to 80 degrees, is separated and sold under the name of benzine. This is used in mixing paints and varnishes, and for purposes generally for which camphene was formerly employed. The last of the distillation, constituting the principal portion of the petroleum, is illuminating oil. This ranges in density from 35 degrees to 60 degrees. As the stream of oil flows out from the lower end of the condenser its color is a light, delicate blue. The tar is sold for making illuminating gas, and considerable quantities are sent to Europe to be employed in manufacturing dyes.

The purification of the distilled burning oil, by which it is in a great measure deprived of its offensive odor, is affected by agitating it with sulphuric acid, neutralizing the acid with soda, and finally thoroughly washing it by agitating with water. Nearly all the hydrocarbons of petroleum are neutral, neither acid nor alkaline—but few have alkaline or basic properties, and it is from these that the crude oil derives its offensive odor. Sulphuric acid enters into combination with these basic oils, forming salts which can be completely removed by washing. The acid also oxydizes a portion of the heavier hydro-carbons, converting them into asphaltum which settles out of the oil with the water. The washing is effected in the same vessels that are employed in treating the oil with sulphuric acid. The oil is pumped or drawn into the vessels, the sulphuric acid is added, the fans are set in motion till the liquids are thoroughly mixed, and then the oil is allowed to settle to the bottom of the cask. The bottom is of a conical form, with a hole in the centre closed by a stop cock. The oil and its compounds settle in a dark mass at the bottom, and then the stop cock is opened and this sediment is drawn off, the workmen carefully watching the flow so as to stop it before any of the clear oil escapes. Next, soda is put into the cask, the agitators are driven awhile, the mass allowed to settle, and the sediment is drawn off. Finally, water is pumped in with the oil, and the agitating, settling and drawing off process is repeated.

From the London Oil Trade Review.

PETROLEUM AS FUEL.

SIR,—In the last number of *The Oil Trade Review* you stated that my plan for burning petroleum as fuel was mentioned by the *Scientific American* as far back as 1859. "The oil being conveyed from elevated tanks and allowed to pass upwards through minute perforations in blocks of fire-brick or soapstone." I did not see this until a few months after my provisional protection had been secured. I take, however, the porous material as I find it, and it is not necessary to place the petroleum in elevated tanks.

The fact that the oil could be burnt through a porous material was, as I have since found, well known to many engineers and gentlemen, who have succeeded in burning it. But a simple idea for a new useful application is one thing; applying it successfully is another. I can only say that the six months allowed to perfect the first idea was not near sufficient to complete it. My moveable grate was a mistake; frightened at the paper of Professor Fisher and that of another chemist I saw in your paper, and it being too late to draw back, I adopted the moveable grate as a chance offered me that my time and expenditure might not be wholly thrown away; but when the grate came to be proved, it showed the oil to be so powerful, so much better adapted in every way for steam fuel than coal, as to prove that the learned chemist had altogether made a mistake. One of these gentlemen stated that 1252 lbs. of petroleum had only the same heating power as 2000 lbs. of coal He must surely have worked with his elbows.

The boiler now nearly completed at Woolwich Dockyard is an oil boiler, with the grate forming part of it; it is totally different from a coal boiler and grate, Coal could not profitably be burnt in it. The size is 7 ft. by 5 ft. The grate in four bars, any one of which can be burnt seperately. It is on the same principle as moveable grate; the specification attached to my patent correctly describes it. The advantages of petroleum as steam fuel is, it reduces the size, and therefore the first cost, of a boiler; no large grate or chimney flues are necessary. When it becomes the fuel for the locomotive it will reduce that in length one-third, and that of its tender two-thirds; but it being necessary that the two should form one construction, the locomotive will be heavier, and be able to grasp the rails more effectually. With land engines it will abolish, by rendering unnecessary, those tall chimney stalks which, with their dense mass of black smoke, dot and disfigure every English landscape; it will restore to smiling verdure, the black country, abroad it will greatly save the destruction of the forests. A tank of petroleum in the upper part of a dwelling would permit every one of its stoves to be supplied with flame as easily as a gaselier with light; cooking might not be performed—the stock pot, perhaps, excepted—but a cheerful blaze and boiling water to any extent would be supplied; but, more than all this, it will stop all exportation of coals from this country, and by reducing the price of coals enable every poor man to have his comfortable coal fire in his own cabin, and not drive him to a public house to seek for it.

I am, &c., C. J. RICHARDSON.

PETROLEUM.

(We conclude from our previous issue the subject of the Carboniferous and Saliferous Geologic Periods.)

Where were the huge animals that existed in the other periods to obtain the oxygen to fill their capacious lungs? The megatherium, with a head and neck like those of the sloth, legs and feet like the ant eater, its body 12 feet long and 8 feet high—its fore feet a yard in length and 12 inches wide, with gigantic claws; across its haunches measuring 5 feet, and its thigh bone 8 times as thick as that of the elephant, its spinal marrow 1 foot in diameter, and its tail at the root 6 feet in circumference. How could such an animal live in an atmosphere such as existed before or during the carboniferous period? The toxodon with a skull 2 inches in length—the mylodon, which was capable of shaking down large trees, and feeding on their leaves and branches. How, we ask, could these animals live in an atmosphere such as that of the carboniferous period?—or how could coal or oil be deposited from vegetable growth in any period in which they did live?

But still, other considerations enter into the subject. The warmth of the sun, as we know, is not equal all over the earth. Vegetable growth is much more prolific in the south than in the north; the development much greater, consequently, that portion of the globe's surface which most abounds in trees of large growth would be unable to secure its necessary carbon, so much greater in amount than that required by the north, were it not for the development of animal life, upon the supposition of the supply being equal in all parts of the globe's surface. The vegetable is the food of the animal, which consists mostly of carbon; this is taken into the economy and converted into flesh; upon the death of the animal this carbon is released as carbonic acid, which passes into the atmosphere; on the other hand, in the tropics, where the sun shines much longer and more vigorously, the plants absorb carbonic acid and give off oxygen. Were this to continue long, an atmosphere unfit for respiration would soon exhaust both animal and vegetable life—but a wise provision is made for this—the same wind that blows from the tropics laden with free oxygen gas given off by plants, returns to them laden with carbonic acid, for which it has exchanged its oxygen while tarrying in the north. This beautiful arrangement has existed from the beginning. We here see how necessary to the existence of the world itself was the existence of the animal. Without animal life, all the carbon would be chained to one spot, from the unequal distribution of the sun's rays. But just as soon as the atmosphere became fit for respiration, the animal appears, and his existence seems to keep up the equilibrium. If we suppose the strata above the carboniferous to have contributed to the formations of coal and petroleum, we must suppose a state of the atmosphere which we know would be fatal to animal life—if we suppose that these deposits took place before the carboniferous period, we find no material capable of furnishing the elements entering into their composition, for the carbon existed in the air as carbonic acid, the hydrogen in the water, and coal oil consists of equal quantities of each. We know of no agency, except Almighty power, capable of decomposing the first two and combining them again as oil.

We now see that it was impossible for the carbon necessary to form those immense trees which are found in the carboniferous strata, to have existed in either of the other periods; and as to that preceding the carboniferous period, except towards its close, there was no foundation for trees to grow upon, as it was the first cool crust of the globe; and vegetable tissue was, consequently, not met there in excess, and the deposition of coal and oil could not have taken place to such an extent as we find them in the coal measures.

But physical laws would have been equally as operative in preventing the deposition of coal and oil prior to the carboniferous age, as the development of animal life would have been after it. Had the enormous amount of carbon of the vegetable kingdom been suffered to escape into the atmosphere as carbonic acid upon decomposition, we see that the air would have been unfit for respiration, consequently, it was buried as coal and oil where it would serve the purposes of sinful man in after ages.

Both coal and oil are generally found in particular strata, sandstone and shale. This is the case on Oil creek, the Dunkard and elsewhere. Now, in addition to the fact that these strata are not found below the carboniferous period, there was no time between the age of the large coal trees and the first development of plant life for those changes necessary to deposit the sandstone and shale in which the coal and oil are imbedded. To make such deposits it would be necessary for whole continents to be flooded for many ages; for seas to change their beds, for mountains to arise, and lakes to sink. It was but shortly after the first cooling of the earth's crust—it cannot be supposed that such immense bodies of water yet existed—it yet needed the deposition by the sun of the metallic bases whose oxides have since formed mountains of rock. The seas, lakes and rivers needed deposits to establish their boundaries. Besides, we cannot suppose the growth of trees until the earth had been cooled and the waters formed; and what so quick to form those boundaries as water and marine plants? And this is just the time when marine plants did exist in abundance, and became extinct in the next period, or that of the great development of terrestrial plants. In fact, marine plants existed then in an abundance never equalled since, and it would even seem that that was their office; but after these boundaries had been established, and the sea and the dry land were made, then commenced the period of glory for the plant kingdom—then did the earth riot in luxuriant growth—then commenced the growth of these gigantic trees, the lepidodendra, and also the sigillaria, with its great roots, stigmariæ, so frequently found in the coal measures.

But it may and has been said, why may not those marine plants have assisted in the formation of coal and oil? The answer is very plain—it was necessary that the woody matter should be covered up and the changes of the beds of the seas and rivers had not taken place, and could not take place, until the boundaries had been formed through which they burst during the earth's upheavals, and covered the vegetable growth of the succeeding or carboniferous age, an age in which nothing but growth existed, and then the layers of sandstone and shale were made. The sudden extinction, at this time, of many of the families of plants might give rise to the suspicion that this was a period of universal flood. In the next period we find the marine plants again appear, accompanied this time by the birds of heaven, singing the praises of Almighty power.—*American Exchange and Review.*

During the last three years, which have been the most trying of the transition period, the assessed valuation of San Francisco has increased from $147,000,000 in round numbers, to 177,000,000, showing an average gain of $10,000,000 per annum, in spite of Washoe and drought. The increase in one year alone, from 1862 to 1863, was about $11,000,000.

The stand pipe for the Kensington Waterworks was put in position Friday, March 24. This pipe is made of boiler iron, 150 feet long, 5 feet in diameter and weighs about twenty tons. The water will be pumped from the channel of the Delaware into the pipe, and from thence to the reservoir, a distance of 17,000 feet.

MINING.

COPPER.

Copper would appear to be the metal having the closest approach—in productively valuable deposits—to the waters of the Pacific, as they lave one side of our western hemisphere. The western coast of South America is cupriferous, and Chili, a narrow belt of territory by the ocean, ranks with England in extent of copper production.

The metalliferous phases of the mountains extending from southern Patagonia to the Polar sea require much practical and scientific exploration to be definitely understood. These mountain chains have a geographic rather than topographic unity, and have much geologic and lithologic diversity. Apparently, the great Andean mountains consist of two ranges, each more or less broken, divergent and disconnected. The range along the coast line is often interrupted by the ocean indentations of the continent, but the other has its continuity through both North and South America. In Chili and Peru these ranges are distinctly defined though approaching each other, and it would seem that the coast range, disappearing at the mid narrowness of the continent, reappears on the peninsular of Lower or Old California, and follows the Pacific line of the United States.

The coast range consists of granitic or porphyritic masses running into diorite and greenstone. In such rocks are the beds of purer copper pyrites. In Chili and Peru the copper ores are found in distinct formations, viz. in the granitic and other crystalline rocks, and in the stratified formations. In the former the copper ores are devoid of silver antimony and arsenic. In Chili at the eastern flank of the Cordilleras of the Coast begins a stratified formation of a latter epoch than the upheaval of the Andes. Eastward from the line of contact of this formation with the older crystalline—and nearer the Andes—are found the arseniates of copper, argentiferous and other copper ores.

This parallelism of distinct copper deposits has a long range, and though like rock formations may show anywhere the presence of the purer or the mixed copper pyrites the westernmost mountain region may be called a great belt of the purer sulphuretted copper, and though the veins may sometimes be completely lost, they reappear with like mineral associations.

The presence of this belt is indicated in California and Oregon, and in the latter State is receiving some demonstration by copper mining in Josephene county. Here a noted lead, the Queen of Broze, is located on a spur of the Siski ou mountains, the most western branch of the great mountain division.

Proximity to the coast gives the facilities of access and shipment which are almost as important as the productiveness of the veins. There is a manifest decrease in the yields, as a whole, of the present productive copper regions of the globe, and the needs arising from a decreased supply may give an impetus to the development of the copper belt we have been glancing at. That another Chili, cupriferously speaking, may be found by our Pacific shore is within the possibilities of the future.—*American Exchange and Review.*

MINERAL RESOURCES OF MICHIGAN.

Gov. Henry H. Crapo, of Michigan, in his inaugural address of January 4, 1865, makes the annexed statements in connection with the mineral resources of the State:

A large portion of the territory of Michigan is underlied by vast beds of mineral deposits: and in this description of wealth she is unsurpassed by any State in the Union. Her copper is of great purity, and its mines—of unknown extent—have already, although in their infancy, reached an annual yield of more than ten thousand tons, equal in value, at the point of shipment, to $7,000,000. Her iron mines are also of great extent, and the ore is of the finest quality; and although they have very recently been opened, the first yield being only 1,447 tons in the year 1855, yet during the past year the shipments from Marquette have reached the aggregate of 248,000 gross tons, besides 25,000 tons supplied to the furnaces of Marquette, of the aggregate value of more than two million dollars. The immense increase exhibited here, in a commerce just begun, as it were, renders it futile to attempt an estimate of its future importance. The prospective worth of these mines is, in truth, almost incalculable.

Michigan has also extensive fields of coal, containing a quantity sufficient to feed the furnaces of the world. Much of it is of good quality, and all of it is valuable for manufacturing and other purposes. In the absence of manufactures, and from the abundance of fuel incident to a new woodland country, little attention has heretofore been given to this subject, yet the time is not far distant when the coal fields of Michigan will be a source of much wealth.

There are also extensive beds of gypsum, of unsurpassed richness and great value not only to the farmer, as a fertilizer, but to the State as an article of commerce.

Numerous springs of saline water abound in the Saginaw valley, as well as in other sections of the State, which, it is believed, will yield an inexhaustible supply of the strongest brine. To aid in giving a more general idea of the great importance and value of this interest, I will state briefly a few facts in connection with the manufacture of salt in that valley for the year 1864:

Amount of salt produced, barrels	488,189
Amount of wood consumed, cords	122,047
Aggregate value of wood	$335,17
Equal to land cleared, acres	3,051
Average number of men employed	747
Aggregate value of barrels used	$219,685
Total amount of capital invested	$2,100,000
Average value of salt at shipping point, per barrel	$2.2
Aggregate value of salt at shipping point	$1,098,425

I have no doubt the interests of this great staple would be materially benefitted by the passage of a proper law for its inspection; and as those engaged in this business will undoubtedly ask for some law on the subject, I would recommend such legislation as will the most effectually promote the interest of the manufacturers, and, at the same time, protect the public from imposition by the sale of an inferior article.

It is also believed by many that rich and productive springs of oil will yet be discovered within the limits of the State, indications of which are found in many places; and to aid in a more speedy settlement of this question I would suggest for your consideration the passage of a law authorizing the payment of reasonable bounty on oil—subject, however, to such restrictions as to duration and amount as would prevent the same from becoming burdensome in the event of a success in the discovery similar to that of salt in the Saginaw valley.

Pennsylvania, in the year just closed, has produced from three sources alone, the following values:

Coal,	$69,821,962
Petroleum,	46,912,430
Iron,	54,781,907
Total,	$171,519,353

On this amount she paid to the Government an internal revenue tax of over three millions and a half, as follows:

On Coal,	$437,192 68
On Iron,	1,046,737 00
On Petroleum,	2,141,829 00
Total,	$3,625,788 68

The Patersonian says, that upon a single 700 acre tract in Passaic county, New Jersey, paint, oil, coal and plumbago have been discovered in large quantities.

THE SECRETS OF THE DEEP.

BY PROFESSOR ANSTED.

What has become of the innumerable bones and teeth and scales of fishes that, for all the years gone by, have died in the broad Atlantic? Where are the remains of the many ships that have been swallowed up by its waves? Where the gravel heaps left behind by the icebergs that have been melted in floating down from the polar seas? Where are also the substances drifted across by the Gulf Stream and other currents that traverse the ocean? Nothing—not one solitary indication of all these, but in their place an impalpable, tenacious mud, everywhere extending, and made up of little particles of carbonate of lime secreted by countless myriads of animalcules, the food perhaps of the whale and fishes of the surface, but more probably the sole inhabitants of those great depths which other animals more highly organized would in vain attempt to penetrate. Truly may we say that the secrets of the deep are mysterious and grand, and that the search after them repays the labor of investigation. By the investigations of modern observers we find laid open for our observation the great valley of the Atlantic, descending, by a succession of broad terraces and step-like cliffs, to a gully or ravine some 70,000 feet below the ridges of the Andes and Himalaya Mountains. Like a vast amphitheatre, these terraces appear to surround a central comparatively small arena. On one principal upper floor, ten to fifteen thousand feet below the present sea level, we have discovered the inhabitants, and already all trace of our world above is lost; all high forms of organic life are absent; and nothing remains but skeletons of the simplest animals, of which it may almost be said that but one or two specific forms can be determined—certainly nine-tenths of the solid material consisting of the remains of one species only. What may be expected when the deeper levels are dredged, and we bring up the materials of which they consist? What will be the direction of the line of deepest depression and how will it agree with the adjacent line of greatest elevation? What will be the inhabitants of that part of the ocean bottom fully double the depth, concerning which we have only very recently obtained information, where the pressure of the water is nearly seven tons to the square inch of surface, and where each cubic foot of water probably occupies less space by one hundred cubic inches than it would do if lifted to the surface, owing to the weight of the superincumbent column of water resting upon it? These are queries yet unanswered, but to many if not all of them, we may expect to receive satisfactory answers ere long. The facts that remain to be determined are hardly more difficult to make out than those we have already mustered; and the investigations, when once fairly set on foot, will probably soon leave little to be desired. The soundings that formerly could not be attempted, except in the calmest weather, and with the certainty of half a day's severe and incessant labor, are now completed, not only in ordinary weather, but even in a fresh breeze and disturbed sea, in a couple of hours; and whilst, according to former methods, there was more probability of enormous error than of accuracy, the result is now to be depended on, in almost every case, within very moderate limits.

Rich Rock.—A lot of 1,100 pounds of rock from the Osceola mine, Montgomery District, Esmeralda, was worked a few days since at the Metallurgical works of White & Murphy, in San Francisco, which yielded at the rate of $2 740 to the ton. The rock assayed at the rate of $3,241. It was a very difficult ore to work, being a capriferous silver ore, (silver glance,) containing about 16 per cent. of antimony. Over seven tons of ore from this mine was recently taken to Aurora for working, which yielded within a fraction of $96 per ton. The ore worked by White & Murphy was selected from this lot. It is claimed by the proprietors that one ton of ore as good as that worked, can be taken for every twenty tons of ore as it comes from the mine.

We take the following Report from statement made to the stockholders of the Morris Canal and Banking Company, for April, '65.

ANTHRACITE COAL TRADE OF THE UNITED STATES.

The following Table exhibits the quantity of Anthracite Coal sent to market from the different regions in Pennsylvania from the commencement of the Trade, in 1820, to 1864, inclusive; to which is appended the Semi-Anthracite Trade, the Cumberland Bituminous Trade, the Importations of Foreign Coal, and the Exportation of Domestic Coal:

	HARD ANTHRACITES.																		
YEAR.	SCHUYLKILL.					Sold on line of Schuylkill.	LEHIGH.			WYOMING REGION.						Shamokin.	Aggregate.	Annual Increase.
	Canal.	Railroad.	Total.	Pine Grove.	Little Schuylkill.		Canal.	R'Road.	Total.	By L'high R. R.	Del. and Hudson Coal Co.	Penn. Coal Co.	By Canals.	Great Western R. R.	L. & B. Railroad	Total.			
1820							365		365									365	
1821							1,073		1,073									1,073	708
1822	1,480		1,480				2,240		2,240									3,720	2,647
1823	1,128		1,128				5,823		5,823									6,951	3,231
1824	1,567		1,567				9,541		9,541									11,108	4,157
1825	6,500		6,500				28,393		28,393									34,893	23,785
1826	16,767		16,767				31,280		31,280									48,047	13,154
1827	31,360		31,360				32,074		32,074									63,434	15,387
1828	47,284		47,284			3,154	30,232		30,232									77,516	14,082
1829	79,973		79,973			3,382	25,110		25,110		7,000					7,000		112,088	34,567
1830	89,984		89,984			5,821	41,750		41,750		48,000					48,000		174,734	62,651
1831	81,854		81,854			6,150	40,966		40,966		54,000					54,000		176,820	2,086
1832	209,271		209,271		14,000	10,048	70,000		70,000		84,600					84,600		368,871	187,051
1833	292,971		292,971		40,000	13,429	123,000		123,000		111,777					111,777		487,748	125,877
1834	226,692		226,692		34,000	19,429	106,244		106,244		43,700					43,700		376,636	d111,112
1835	389,508		389,508		41,000	18,571	131,250		131,250		90,000					90,000		560,758	184,122
1836	432,045		432,045		35,000	17,863	148,211		148,211		103,861					103,861		684,117	123,359
1837	523,152		523,152	17,000	31,000	21,749	223,902		223,902		115,387					115,387		879,444	195,327
1838	423,875		423,875	18,000	18,000	28,775	213,615		213,615		78,207					78,207		738,697	140,747
1839	442,608		442,608	20,589	9,000	30,890	221,025		221,025		122,300					122,300	11,980	818,402	79,805
1840	452,291		425,291	23,860	20,000	28,924	225,318		225,318		148,470					148,470	15,505	864,384	45,982
1841	564,692	850	565,542	17,653	40,000	41,223	143,037		143,037		192,270					192,270	21,463	959,973	95,589
1842	491,602	49,902	541,504	32,381	37,000	40,584	272,546		272,546		205,253		47,346			252,599	10,000	1,108,418	148,445
1843	447,055	230,254	677,312	22,905	31,000	34,619	267,793		267,793		227,605		58,000			285,605	10,000	1,268,598	155,180
1844	398,887	441,491	840,378	34,916	57,000	60,060	317,002		317,002		251,005		114,906			365 911	13,087	1,680,850	367,252
1845	263,587	820,237	1,083,796	47,928	74,000	90,000	429,458		429,458		273,435		178,401			451,836	10 000	2,018,018	382,163
1846	3,440	1,233,142	1,236,582	58,926	91,000	155,460	517,116		517,116	5,886	320,000		192,568			518,889	12,572	2,344,005	330,992
1847	222,693	1,360,681	1,583,374	67,457	106,401	226,610	633,507		633,507	10,466	388,208		284,398			583,067	14,904	2,882,309	538,304
1848	426,602	1,216,233	1,652,835	61,530	162,626	252,887	670,321		670,321	10,425	437,500		237,271			685,196	19,356	3,069,238	206,929
1849	489,208	1,115,918	1,606,126	78,299	174,758	239,290	781,656		781,656	19,590	454 240		259,080			732,910	19,650	3,217,641	128,403
1850	988,080	1,425,977	1,712,007	70,919	211,960	207,868	690,456		690,456	32,156	441,403	111,014	248,250			827,823	19,921	3,321,196	103,495
1851	579,156	1,650,270	2,229,426	*none.*	310,367	312,867	964,224		964,224	25,072	479,078	316,017	336,000			1.156,167	24,899	4,329,580	1,008,394
1852	800,068	1,650,912	2,450,950	66,543	325,499	322,211	1,072,186		1,072,186	41,890	497,105	426,164	319,341			1,284,500	25,846	4,899,975	570,445
1853	888,695	1,582,248	2,470,943	80,660	389,295	394,078	1,054,309		1,054,309	26,285	494,327	512,659	442,511			1,475,782	15,500	5,097,144	197,169
1854	907,354	1,987,554	2,895,208	91,462	444,184	444,160	1,207,186		1,207,186	29,292	440 944	496,648	492,689	133,965		1,603,478	63,500	5,581,834	734,690
1855	1,105,263	2,213,292	3,318,555	112,213	426,208	471,861	1,275,050	9,063	1,284,113	50,209	565,460	564,808	464,089	187,000		1,771,511	116,117	6,486,097	654,263
1856	1,169,458	2,088,908	3,258,356	157,152	454,515	520,499	1,186,230	165,740	1,351,970	44 270	499,650	612,500	510,631	305,530		1,972,581	137,406	6,751,542	256,445
1857	1,275,989	1,709,552	2,985,541	145,012	346,877	511,977	900,314	418,235	1,318,541	37,959	480,699	536,008	407,914	490,023		1,952.603	155,806	6,431,378	d320,164
1858	1,323,804	1,542,645	2,866,449	137,376	383,981	441,166	909,000	471,080	1,380,080	69,644	348,739	630,056	346,430	683,411	210,042	2,186,094	135,893	6,224,338	93,460
1859	1,372,021	1,682,982	3,004,953	125,262	366,343	554,774	1,050,659	577,652	1,628,311	71,399	591,000	688,854	458,548	829,495	223,506	2,781,236	180,753	7,517,516	1,092,678
1860	1,356,688	1,878,156	3,270,516	152,957	323,186	668,877	1,791,082	730,642	1,821,674	100,277	499 568	701,228	455,306	1,080,227		2.856,896	210,108	8,059,017	511,501
1861	1,183,570	1,460,892	2,697,489	167,357	171,492	435,320	994,705	743,672	1,738,377	111,073	726,644	629,657	316,765	1,104,319		2,918,458	241,451	7,487,672	d574,345
1862	981,729	2,805,606	2,890,598	188,965	249,451	545,916	896,227	882,578	1,851,054	26,723	687,066	601,091	559,246	1,094,315		3,180,887	241,642	7,640,905	188,283
1863	885,842	3,065,261	3,433,265	212,794	385,788	671,589	699,558	1,195,155	1,894,713		828,150	662,904	662,721	1,223,165		3,766,374	274,986	9,420,185	1,779,280
1864	1,900,509	3,065,579	3,642,318	211,316	387,498	748,448	758,087	1,295,419	1,928,706	9,314	852,139	759,544	630,142	1,302,457	228,601	3,961,342	333,478	9,992,607	557,624
	23,120 411	35,676,725	56,673,207	2,411,302	6,386,572	8,580,064	20,054,015	6,489,181	26,489,758	781,820	12,133,822	8,189,441	7,902,498	8,433,847	1,962,449	38,565,767	2,335,723	124,781,542	

COAL TRADE OF THE UNITED STATES.—(*Continued.*)

YEAR.	SEMI-ANTHRACITE AND BITUMINOUS.									Aggregate of all kinds.	Total Increase and Decrease.	Exportation of Domestic Coal.
	Lykens Valley.	Short Mountain.	Dauphin County.	Treverton.	Broadtop.	Cumberland.	Import of Foreign Coal.	Aggregate.	Increase and Decrease.			
1820										365		
1821							22,122	22,122	22,122	23,195	22,830	
1822							34,523	34,523	12,420	38,243	15 052	
1823							30,433	30,433	d4,090	37,384	d859	
1824							7,228	7,228	d30,156	18,356	d25,999	
1825							25,645	25,645	18,417	60,538	42,265	
1826							35,665	35,665	10,020	83,712	23,174	
1827							40,257	40,257	4,592	103,691	19,979	
1828							32,302	32,302	d7,955	109,816	6,127	
1829							45,398	45,398	13,091	157,476	47,658	
1830							58,186	58,186	12,748	232,870	75,394	
1831							36,509	36,509	d21,627	213,389	d19,541	
1832							72,978	72,978	36,496	436,849	223,520	
1833							92,432	92,432	19,454	580,180	143,331	
1834							71 626	71,626	d20,806	448,263	d131,918	
1835							49,969	49,969	d21,657	610,727	162,465	
1836							108,432	108,432	58,463	792,549	181,822	
1837							138,450	138,450	45,024	1,032 894	240,345	
1838							129,083	129,083	d24,367	867,780	d165,114	
1839							181,551	181,551	52,468	999,958	132,178	
1840							162,867	162,867	d18,648	1,027,251	27,298	
1841							155,394	155,394	d7,473	1,115,367	88,116	
1842						1,708	141,521	143,227	d12,167	1,251,645	136,278	
1843						10,082	41,163	51,245	d91,982	1,314,843	63,198	
1844						14,800	87,078	101,963	50,718	1,732,813	417,970	
1845						24,653	85,776	110,429	8,466	2,123,443	390,630	
1846						29,795	156,853	176,648	66,219	2,520,656	397,210	
1847						52,940	148,021	200,961	24,313	4,088,170	567,517	
1848						79,571	196,168	275,739	74,788	2,364,977	276.807	9,200
1849	23,825					142,449	198,213	365,987	90,248	3,583,628	218,615	9,661
1850	37,766					198,848	180,439	415,050	50,063	3,736,186	152,558	38,741
1851	54,200		20,000			257,679	214,774	546,653	131,603	4,876,183	1,189,997	37,727
1852	59,857		33,689			334,178	183,015	610,689	64,036	5,510,664	654,481	45,836
1853	69,007		29,000			553,980	231,508	802,495	251,806	5,959,629	448,975	79,510
1854	57,500	50,000	63,000			459,681	252,865	1,071,644	269,169	6,903,498	943,859	98,848
1855	65,721	50,500	1,000			662,279	267,408	1,009,933	d1,731	7,556,080	652,582	110,586
1856	61,187	41,739		73,112	42,000	706,450	178,045	1,107,417	97,484	7,858,930	302,929	136,594
1857	65,201	56,588		110,711	78,813	582,488	235,192	1,161,746	54,328	7,592,118	d265,843	180,355
1858	73,396	55,447		106,666	105,473	649,656	259,855	1,249,550	87,804	7,774,988	181,270	118,304
1859	67,564	71,148		124,290	130,595	726,354	281,208	1,372,271	122,721	8,889,787	1,115,899	151,492
1860	78,208	100,632		90,148	156,903	788,900	240,697	1,435,517	113,246	9,544,594	654,747	187,059
1861	61,060	91,380		49,477	272,625	336,930	533,115	1,259,292	126,225	8,843,964	d700,570	158,171
1862	82,092	95,119		63,223	333,606	289,804	545,488	1,359,158	424	9,000,621	158,657	216,458
1863	77,606	63,674		62,200	305,678	657,050	1,000,775	2,166,985	807,269	11,287,120	2,586,499	173,021
1864	68,021	61,952		56,301	356,645	665,605	510,608	1,749,132	d417,853	11,741,189	454,019	175,080
	1,023,562	788,149	146,689	736,148	1,862,848	8,533,890	7,723,760	20,560,904		144.338.700		

GAS.

THIRTIETH ANNUAL REPORT OF THE TRUSTEES OF THE PHILADELPHIA GAS WORKS.

JANUARY, 1865.

To the Select and Common Councils of the City of Philadelphia.

In conformity with the Ordinances, "for the construction and management of the Philadelphia Gas Works," the Trustees present their Thirtieth Annual Report.

The contingent fund of the trust amounted on the 1st of January, 1865, to the sum of $1,189,546 65, which has been applied to the cost of extension of the works, and to that extent has avoided the necessity of loans, which otherwise would have been necessary.

The quantity of gas manufactured during the year has been 794,676,000 cubic feet; the increase over the previous year is 58,978,000 cubic feet.

The whole quantity made under the trust from its commencement is 7,699,927,000 cubic feet.

The largest consumption in twenty-four hours to this time, is 3,586,000 cubic feet.

The street mains laid during the year, have a length of 39,045 feet, making the entire length of main pipes 458¾ miles. The whole number of public lamps under the care of the trust on the 1st inst., was 7369, of which 7351 are lighted with gas, and eighteen with fluid.

The entire number of lights supplied with gas from the City Works, is 588,497, being an increase of 30,518 during the year.

It is a source of gratification to be able to inform the Councils that the trust is in a very prosperous condition, having been able promptly to meet all engagements entered into during the course of the year's business, as well as to make the necessary provision required by Ordinances of Councils for the Sinking Fund.

Bituminous coal, which enters so largely into the manufacture of gas, is now double the price that was formerly paid for it, and under our present contracts, we are being supplied now at the rate of eleven dollars per ton; all other materials used, as well as the labor employed in the manufacture and distribution of gas, are considerably increased in price, which rendered it absolutely necessary for the Trustees to raise the price of gas; this was accordingly done and our citizens, we are sure, will agree with us, that it was absolutely unavoidable under the circumstances, and will regard it as one of the evils incident to the present unfortunate condition of our National affairs.

During the past year an event occurred, which was as sudden as it was unexpected; John C. Cresson, Chief Engineer of the Works, for over a quarter of a century, dissolved his connection with the trust by tendering his resignation, his long and faithful service in a position of so much responsibility induced the trust, as a mark of its esteem, to tender him a suitable testimonial, which was accepted.

To properly discharge the duties of Chief Engineer of the Philadelphia Gas Works, requires scientific knowledge as well as integrity of character; these were happily found in the person of his successor, Thomas S. Stewart, who has had charge of the works since the resignation of Mr. Cresson.

By direction of the Board of Trustees,

ANTHONY MISKEY, Pres't.

ENGINEER'S REPORT.

The Chief Engineer has the honor of submitting to the Board of Trustees the Annual Report, exhibiting the condition of the Works and the results of operations during the year 1164.

The product of the factories belonging to the Trust has been as follows:

333,407,000	cubic feet	were made at	First Ward	Works
308,175,000	do.	do.	do. Ninth	do.
136,676,000	do.	do.	do. Fifteenth	do.
16,418,000	do.	do.	do. Twenty-first	do.
794,676,000	Total for the year, being an increase of 8 2-100 per cent. on last year's product, and for the first six months of the year; viz., from January to July 11½ per cent., and from July to January 1st, 1865, 4½ per cent. increase over the corresponding periods of 1863.			

From the commencement of the Works the quantity of gas made has been seven thousand six hundred and ninety-nine millions, nine hundred and twenty-seven thousand cubic feet.

The largest consumption in twenty-four hours was three million five hundred and eighty-six thousand cubic feet.

STATEMENT.	Tons.
Coal in store, January 1st, 1864,	23,950
do. bought in 1864,	76,716
	100,666
Coal used in 1864,	83,744
do. in store, January 1st, 1865,	16,922
	100,666
	Cords.
Wood on hand, January 1st, 1864,	717
do. bought in 1864,	907
	1,624
Wood used in making gas, in 1864,	1,467
do. on hand, January 1st, 1865,	157
	1,624

There has been used 169,252 bushels of lime in the purification of the gas.

	Bushels.
Coke on hand, January 1st, 1864,	39,224
do. made in 1864,	2,980,567
	3,019,791
Coke used in offices, yards and streets,	30,882
do under the retorts,	1,586,253
do. for boilers of exhausters, lime kilns and heating apparatus,	123,648
do. sold in 1864,	1,135,822
do. on hand, Jan. 1st, 1865,	143,186
	3,019,791

The number of meters and service pipes introduced, during the year, has been as follows:

In the Wards	comprised in limits of old City,		205
do.	do.	Spring Garden and Penn,	850
do.	do.	Moyamensing,	344
do.	do.	Southwark,	204
do.	do.	Richmond,	40
do.	do.	Kensington,	129
do.	do.	Twenty-first Ward,	35
do.	do.	Twenty-second do.	45
do.	do.	Twenty-third do.	34
do.	do.	Twenty-fourth do.	131
In all,			2,017

Adding to which the number of meters and services before in use, makes the present number of meters in use, makes the present number of meters in use 48,084, and service pipes, 48,199.

There is now a total of 48,556 consumers now on the books of the Trust.

Total number of lights, 588,497.

There are now, under the charge of the Trust, placed throughout the wards of the City, 6928 public street lamps, supplied by gas from the Works, and 18 with fluid; total, 6,946.

39,045 lineal feet of street mains have been laid during the year, making the aggregate length of main pipe belonging to the Trust 2,422,497 feet, or 458¾ miles.

In the retort house are fourteen benches in single line, containing seventy-two fire clay retorts, and in the eastern end abutment of the section, two benches for experimental purposes, and retaining intact the former experimental apparatus and room.

The retorts are in form like to York Ds 9 feet long, and 12 by 20 inches in diameter in the clear, twelve benches are set with five retorts, and two with six retorts in each; the hydraulic main is 18 inches; auxiliary main 14 inches, and the stand pipes six inches each in diameter in the clear.

The hydraulic main is divided into six sections by diaphragms that dip into the tar sufficiently to form hydraulic seals, each of these sections is connected to the auxiliary main by take offs and arch pipes, by the appliance of slide valves to which each section can be worked independent of the others or allow the removal of the dip pipes, &c., of any section not in use. A ten-inch main connects the works with a pair of washers 11 feet high by 24 inches diameter, an exhauster and compensator of Mackenzie's patent and an independent, to which is applied a self-acting valve; these are the main features of the new work, which are arranged so as to work into the old purifying house wherein were previously constructed double sets of refrigerators, purifying boxes, condensers, &c., with their six inch connecting pipes to station meters Nos. 1 and 4, wherein a few alterations were required to adapt them so as to allow of being worked single or together, as the number of retorts in action may require, and the results to be obtained for record.

This work was begun about the middle of August last, and thirty of the retorts were put in operation December 13th, with results thus far highly satisfactory but sufficient time has not yet elapsed wherein proper practical data can be obtained to pronounce decisively upon their ultimate merits, as compared with iron retorts.

The following estimate may be stated as nearly correct:

The seventy-two retorts are capable of carbonizing from thirty-two to thirty-eight tons of coal in the twenty-four hours, the comparative saving of coke in firing the retorts is five bushels per nett ton of coal carbonized.

That the quality of the gas made in the clay retorts is equal to that made in the iron.

That the cost of renewing the retorts, fire bricks and settings at present prices, taking into account their respective durability would be a saving in favor of the clay retorts to the amount of one dollar per nett ton, for each ton of coal carbonized.

That the cost of labor in working is about the same with both kinds of retorts, with great economy in room or space, by the use of clay retorts.

That the coke produced from the clay retorts is fully equal in quality and quantity to that from iron.

The present unsettled commercial and financial condition of the country, the great demand for, and consequent advanced cost of labor has so increased the cost of all the appliances for the manufacture and distribution of gas, that an approximate increase in the current expenditure must be expected, notwithstanding the exertions made to maintain the most rigid economy.

Respectfully, THOMAS S. STEWART,
Chief Engineer.

The amount expended has been:

Construction of works,	$1,760,140 63
Street mains,	1,301,267 00
Service pipes and meters,	756,129 75
Public lamps,	11,814 02
Wharf lot on the Schuylkill,	6,000 00
Site of the Gas Works, First Ward,	36,957 69
Spring Garden Gas Works,	300,000 00
Moyamensing,	80,000 00
West Philadelphia,	50,000 00
Frankford,	20,000 00
Germantown,	90,000 00
Richmond,	16,500 00
Southwark,	113,240 00
Manayunk,	81,000 00
Kensington,	90,717 79
	$4,713,766 88

The liabilities of the Trust, January 1, 1865, for current business, are as follows:

Due for coal, repairs, and materials used in the manufacture of Gas,	$541,947 39
Due to the United States for direct taxes on Gas,	42,000 00
Due for works, street mains, service pipes and meters,	39,873 42
Due for interest and dividends,	24,672 00
Due for Sinking Fund for balance of appropriation to said fund,	55,787 77
Due to the Sinking Funds of the several Gas Works purchased from stockholders,	4,630 00
Due to the State of Pennsylvania for taxes on Gas Loans and stocks,	2,706 66
	$711,617 38

The means to meet said liabilities, are:

Cash on hand,	$199,866 33
Debts due for Gas, &c., and stock of materials on hand,	578,014 97
City Warrants,	84,167 85
	$772,049 15
Surplus,	$60,431 82

In addition to this surplus, loan 12th, for $1,000,000 has been provided for additions to the works, street mains, &c., and working capital.

STATEMENT OF GAS

Paid for in each month of the year, made at all the Works managed under the Trust, being the amount of bills, as per meters, to the first of the month.

1864.	Private Lights.	Public Lights.	Totals.
January,	63,583,100	11,759,850	75,292,950
February,	53,383,900	14,638,309	68 022,209
March,	72,089,600	13,478,614	85,568,214
April,	60,179,700	13,013,367	73,193,06
May,	40,467,400	11,781,250	52,218,655
June,	50,006,400	10,615,460	60,621,861
July,	35,569,500	11,579 644	47,309.144,
August,	22,050,300	13,495,090	35 54939(
September,	30,272,300	13,800,989	44,073.239
October,	31,184,300	14,561,918	45,645 318
November,	31,584,700	16.143,680	47,728.88
December,	59,701,600	16,531.257	76,232.857
	550,042,800	161,408,525	711,451,325

GLYCERIN.

ITS MISSION (SO TO SPEAK) AS A REMEDY, AS AN ADJUVANT, AND AS A SOLVENT.

BY W. J. M. GORDIN, CINCINNATI.

When I accepted this subject at the last meeting of the Association, I expected to have given it more attention than my time during the past year would permit. Not having investigated it as thoroughly as desirable, I will present what I have accomplished in connection with much that is not new, so as to present it as fully as possible, and leave it for the experiments and suggestions of all who may be interested in it.

Glycerin, it is generally known, possesses a wonderful range of solvent properties, dissolving many substances not soluble in alcohol or water. Its agreeable taste, harmless action upon the system, and perfect assimilation with human digestion, specially adapt it when other substances would be rejected. Its sweetening property being almost equal to cane sugar syrup but differing from it in not being liable to fermentation; resembling oils, but, unlike oils, miscible with alcohol and water in any proportion; not volatile at ordinary temperatures, and not becoming hard at the freezing point of mercury. Possessing these properties, it cannot but be an article of importance both in pharmacy and in the arts.

The high price heretofore, no doubt, has kept it from many uses to which it is now applied. Recently glycerin, adapted to the various purposes to which it is extensively used, has been produced at a lower price than alcohol, sugar, or oil, which it has come in competition with, and which places it, seems specially adapted to fill to a considerable extent, and the large amount and low price at which it can be produced, make it worthy of attention at a time particularly when every article of utility should be carefully looked after.

Medicinally, glycerin has been used for its nutritive and alterative effect, and in some cases with marked success, being admissible when cod liver oil and other unpleasant substances would be rejected. These and its soothing effects in coughs, are the principal internal uses to which it has been applied alone. Its more important medicinal value is as a vehicle for the preparation of a great variety of remedies for both internal and external use.

It is a favorite article in combination with the hypophosphites; known as glycerole of hypophosphites, and never disagreeing with the most delicate stomach, as sugar is liable to do, is admissible when syrup is not.

Iodide of iron prepared with it in the place of syrup, makes a handsome and permanent preparation.

Its preservative and solvent property being so much greater than that of sugar syrup, cannot fail to recommend it in the place of that substance for the preparation of ipecac, senega, hive syrup, and such vegetable preparations as are liable to fermentation, specimens of several I now exhibit made with glycerin, costing $2,00 per gallon, which are elegant in appearance, and will undoubtedly remain without change an indefinite length of time.

Its uses externally are numerous. For chapped skin and rough and excoriated surfaces, it has no equal; for sore nipples, skin diseases, ulcers of various kinds, to prevent excessive suppuration and cleanse the secreting surface.

It is highly recommended in deep abscesses with diseased bone, combined with iodine, which it dissolves; with many it is a favorite mode of applying iodine, and its salts.

It is used in cerates and ointments, which do not become rancid so soon when combined with it; as glycerole of lead in place of Goulard's cerate, glycerin being used in the place of wax and oil; as glycerole of kino, which is said to be unchangeable; in the preparation of lactucarium in a liquid form, by which its activity and reliability are more certain; as glycerole of aloes, tar, and arnica for external use. It is used with starch in the proportion of 1 oz. of glycerin to 70 grs. of starch for making an article called "plasma," as a substitute for lard or cerate. And it no doubt possesses advantage in preparing vegetable extracts, such as belladonna, aconite, and others for external use, as they can be readily mixed with it; for liniments, in the place of oil, as it will not become rancid; and has been suggested for the extraction of the active principles of vegetable substances in place of oil and fats, to be used in the preparation of cerates or ointments.

Incorporated with vegetable extracts it will prevent mouldiness and keep them soft, and for pill masses liable to become hard it is a good addition. It may be used as an addition to poultices to keep them soft, or any article to be kept in a moist or plastic condition.

Its solvent and preservative properties are of great importance to the pharmaceutist. In the preparation of fluid extracts it will be found to supply the place of alcohol and sugar to much advantage. My experience is such as to convince me that in most cases extracts will be more permanent by supplying the place of alcohol used to preserve them with glycerin. To fluid extract of Jalap, Veratrum viride, Cinchona aromat, and Iris versicolor, glycerin was added, and all the alcohol evaporated out, specimens of which I now exhibit, presenting a handsome appearance. Sarsaparilla and those liable to fermentation will be much better preserved with it.

I have used glycerin as a menstrumm in the preparation of extracts of cloves, nutmegs, and Ceylon cinnamon, and the preparations are elegant representatives of the substances from which they were made.

It dissolves the vegetable acids, most of the vegetable alkaloids, sulphuret of potassium, permanganate of potassa, sulphate of copper, zinc, iron, and potassa, alkaline and some of the metallic chlorides.

Iodide of ammonium, cadmium, zinc, potassium, sodium, lime, and manganese;

Freshly precipitated carbonate of iron;

Most of the metallic oxides to some extent;

Nitrate of potassa, silver, copper, and lead;

Citrate of iron, citrate of iron and quinine, citrate of iron and strychnia, tartrate of iron and potassa;

Pyrophosphate of iron, and most saline substances.

Heating to give it greater fluidity will generally increase its solvent property.

It may not be amiss to name other purposes for which glycerin is largely used. Much the largest quantity used for any one purpose, except that of filling gas meters, is in the manufacture of hair oils, tonics, and washes, for which it is admirably fitted, taking the place of alcohol and castor oil, which are now too expensive for the purpose, and by its undrying property keeping the hair moist in appearance.

It is largely used in tobacco, and is particularly adapted to the article known as fine cut, preserving it in a moist state an indefinite length of time; and, unlike sugar, molasses, and infusion of liquorice, which has been used for the same purpose, it will not turn sour, and is unchanged by exposure to the air.

Wine and liquor manufacturers use it to improve liquors, by giving body and removing the fiery taste.

It is used by manufacturers of woollen goods in place of oil, being more economical and not requiring soap to wash it out.

Manufacturers of cotton goods use it in size to prevent rapid drying.

Printers use it in place of molasses to make rollers, which will not dry and shrink.

It is used by artists in clay and plaster of Paris to preserve it in a plastic form for modelling.

It is used in soaps.

For filling wet meters, used in measuring illuminating gas, it is now extensively used, and possesses decided advantage over whiskey or any substance before used for the purpose. It is practically free from any objection, not evaporating at any ordinary temperature and can be sufficiently diluted to prevent its absorption of more water from the gas, and not liable to freeze at any degree cold meters are subject to, and rendering them free from the attention necessary if filled with whiskey or water.

It deserves attention as a lubricator for fine machinery, not congealing or being affected by exposure to the atmosphere.

Numerous other applications have been made of it, and its uses will increase as its wonderful properties become known.—*Proc. of the Am. Pharm. Assoc.* 1864.

TO INCREASE THE STRENGTH OF VINEGAR.

There are two ways which may be practiced of increasing the strength of vinegar, equally simple and certain of success. The first was recommended by Homberg, and founded on a fact discovered by Stahl. Expose a vessel of any kind containing common vinegar to the cold of a very frosty night; next morning a quantity of ice will be formed in it, which if removed and thawed will be found to be pure water. The vinegar being freed from so much water, will consequently be more acid than before. The same process may be repeated so as to obtain a new portion of ice as often as is necessary, until a sufficiency of water has been removed, and the vinegar been adequately concentrated. The other mode of strengthening vinegar is to dissolve sugar in it. The sugar either passes at once into vinegar, or undergoes the previous process of the vinous fermentation. Be the manner of the change what it may, it is certain that the sourness of the vinegar very soon begins to increase; after some weeks the taste of the sugar cannot be recognised, and the acidity of the vinegar is much augmented. It will not answer to add too much sugar at once, for the very excess would prevent its own acetification.

The terror of the desert of Sahara is being removed by the application of science. In 1860 five wells have been opened bringing fishes to the surface from a depth of 500 feet. Vegetation is springing up around the wells, and the "dessert will blossom like the rose."

At a recent sitting of the Royal Academy of Sciences at Turin, a highly interesting paper was read on the subject of an embalming process invented by Professor Gorini, who had submitted various dead bodies to the examination of a commission appointed by the academy for that purpose. Professor Gorini's object was to show: First, that by his method dead bodies may be preserved for the space of about six months in a state of softness and freshness sufficient to fit them for dissection after the lapse of such a period: so that if a dead body, so preserved, be taken for a subject of study—say three months after death; the dissection may be continued for a couple of months longer, without the operator's experiencing the slightest inconvenience from cadaveric exhalations, and, what is still more important, without his having any infection to fear in case of his cutting himself inadvertantly during dissection, an accident which has caused the death of many an able practitioner. Second, that at the expiration of six months the same dead bodies begin to be mummified, and after a couple of months longer become completely desiccated and hardened, and may continue in that state for an indefinite number of years, until the operator chooses to dissect them; in which case he has only to put them into water for about a fortnight, when they will reassume the turgid appearance and softness of dead bodies of recent date, and will be found fit for dissection. Third, that Professor Gorini is able to harden dead bodies with such little alteration in their appearance as to enable persons to identify them.

A Fortunate Investor.—The enormous demand that has sprung up for the series of dyes that are prepared from coal, has probably no parallel in the history of color manufactures. Mauve, magenta, girofila, and other popular colors, are all produced by scientific treatment of certain substances that are produced during the distillation of coal. The inventor, or perhaps we should say the discoverer, of these dyes, was a lad in the City of London School, now grown to men's estate, and enjoying an income of several thousands a year, as his share of the profits of the manufacture of these dyes.

A great discovery is reported to have been made by a surgeon of the English army in China, in the way of an effectual cure for small pox. The mode of treatment is as follows: When the preceding fever is at its height, and just before the eruption appears, the chest is rubbed with croton oil and tartaric ointment. This causes the whole of the eruption to appear on that part of the body, to the relief of the rest. It also secures a full and complete eruption, and thus prevents the disease from attacking the internal organs. This is said to be now the established mode of treatment in the English army in China by general orders, and is regarded as a perfect cure.

Magnesium Light.—Mr. W. Stubbs, an English Chemist, says there is great difficulty in keeping a continuous flame with this metal, even when fed by clockwork into a spirit-lamp flame. My remedy is to feed two thin wires at once instead of one; one always remains ignited, and burns the other when a momentary imperfection occurs." We hear of the use of magnesium light in the chambers of the Great Pyramid, now, in consequence, seen properly for the first time. We shall hope to have it taken into the New Grange chamber, for a proper examination of the interior.

A vein of coal, eight feet in thickness, has been opened on Dry Wood Creek, Bourbon County, Kansas.

WESTERN PETROLEUM ITEMS.

In Louisville, Ky., twenty companies are at work and the capital employed reaches eighteen millions of dollars.

Oil indications are multiplying in Ohio, not two miles from Mackburgh, on Duck Creek; and on a tract of land immediately adjoining the workings of the Southern Ohio Oil Company a well has been sunk which yields fifty barrels a day of lubricating oil.

Oil has been struck in Spencer Co., Ind., in the vicinity of Rockport. Four springs are already reported. Prospecting parties are out in Iroquois Co. Ill., with strong hopes of success. Near Des Moines, Ohio, another oil spring has lately been found. Twenty-five companies are preparing to try their hands in Kentucky, and start with a united capital of $18,000,000.

Oil land which, twelve months ago, would have brought about $10 an acre in Michigan, is now worth hundredes of dollars. The Gratiot Company have lately sold forty acres for $6,000.

At Port Huron two tracts of forty acres each in Section Twenty of the town sold for $2,000 and $2,500 each, and 10 acres in the immediate vincinity of the Baker well realized the large price of $10,000, an increase of a thousand per cent. on their original value.

At "Petroleum Centre," near Titusville, thirty five acres of land were sold three years ago for $2700. Since then, oil valued at $10,000 has been taken out of the land, but a New York company still asks $35,000 for the tract.

A Pittsburg paper says in speaking of the rapid increase of the petroleum business:

One can get some idea of the rapid increase of the petroleum business from the fact, that a single telegraph company in Pittsburg have just completed their third line between that city and the oil region. The Western Union Telegraph Company have now a direct line from Pittsburg, by the way of the Alleghany River, another by way of Meadville, and a third by way of Enon Valley and New Castle; and so immense has the corresponding becomes, that all these lines are kept busily employed.

The Petroleum Chronicle gives the following glowing account of what may be expected from the Oil regions of California:

"From the testimony of reliable witnesses, the economic value of the California oil region can scarcely be over-estimated. The magnitude of the supply upon several of the estates which have been taken up by our capitalists is almost fabulous. Along and extended line of outcrops, oil springs occur from which the petroleum spontaneously flows, and by oxidations and evaporation is converted into the asphalt or bitumen which covers the ground for miles. When shallow pits are dug in the vicinity of these springs, the oil begins to flow in quantity. If this be the case, what may not be expected when wells shall have been bored and the necessary apparatus erected for the reception of the oil? Reasoning by analogy, it would seem proper to infer that little or no pumping will be necessary. In the early history of the petroleum developments in Pennsylvania, but little pumping was required. The most celebrated wells produced large quantities of oil, which in some instances flowed with great force, and yet prior to the sinking of the wells, the indications of the amount of oil were limited compared with those in California; where, as we have seen, the oil flows spontaneously in large quantities."

Deepest Mine in the United States.—There is now being worked, at Hazelton, a coal mine which is said to be the deepest in the United States. It is situated on the lands of the Diamond Coal Company, and is known as the Sugar Loaf Slope. It is 770 feet in perpendicular depth, which is below the surface of the Lehigh river at Penn Haven. The slope is in the neighborhood of 3000 feet in length. This mine has been worked successfully for nearly thirty years, thus proving the inexhaustible wealth of our anthracite coal deposits.

THE FLOOD IN THE OIL REGION.

The Oil City Register of March 23 concludes a four-column account of "The Tremendous Freshet in the Allegheny," on Thursday night and Friday, March 16 and 17, with these words:

"From all we can gather at the present time, the loss by the flood, including Oil City, Oil Creek, and the Allegheny river, we estimate at fully $5,000,000. And to replace everything as it was before the disaster, would require a still greater sum. Fully 60,000 barrels of oil were lost, and the number of empty barrels will not fall short of 40,000. The number of boats, not less than 150. The number of horses drowned over 100. The destruction to other property was immense. So far as we have learned, there was but one life lost.

The Rebel Patent Office.—The report made by the Confederate States Commissioner of Patents, shows the expenditures of the office during the year 1864, to have been $9,886 22; the receipts, $27,192 32. This, with the balance on hand, gives a surplus in the treasury to the credit of the patent fund of $19,804 22. Forty-two patents for useful inventions were awarded in the year 1864. So says the Richmond Enquirer.

There is at the present moment at Camden Town station a steel rail, which has out lasted seven of the ordinary iron rails, and yet shows no marked signs of wear. The price of the Bessemer steel rails is only 50 per cent. more than that of ordinary wrought iron rails, so that we may shortly expect to see the universal adoption of the latter.

The New Brunswick Telegraph says for years the people of Pittsburgh have gathered coal upon the beach, and Prof. Brackett, of Bowdoin College, has no doubt that a coal measure extends along the coast from Rhode Island to Nova Scotia, but that the bed of coal is too far out at sea to be worked. The waves cast blocks of it upon the beach, from time to time, and possibly in the remote future the bed may be upheaved and exposed for working.

Great as our National debt may be, with $500,000,000 invested in coal, $400,000,000 in petroleum, $200,000,000 in iron, and $200,000,000 in mines in California and Nevada, ten years would suffice to extinguish it, and still leave the nation in a better condition financially than it ever has been before.

A very delicate oil, much used in Russia cookery, is expressed from the seeds of the sunflower, and is prepared by enclosing them in bags and steeping them in warm water; after which the oil is expressed. This is actually as sweet as butter.

Let no man drop an ill-gotten dollar into his pocket and think the pocket unconscious of the wrong. His very glove shall babble of the bribe that has burnt his hand, and his cravat shall tighten like a rope about his throat.

The quantity of petroleum exported from New York to foreign ports, for the first three months of 1864, was 3,882,495 gallons; in same months in 1865, the quantity exported was 1,970,360 gallons. Decrease 1865, in three months, 1,912,135 gallons.

The public streets of Virginia City, the chief town of Nevada, were lighted with gas for the first time on the night of January 31st.

In science there is work for all hands; and he is usually most fit to occupy the highest who has risen from the ranks.

THE MINING & PETROLEUM STANDARD AND AMERICAN GAS-LIGHT JOURNAL, is published at Tribune Buildings, No. 1 Spruce st. on the 2d and 16th of every month, and is a recognized official organ of—

LIGHT, HEAT, MINING INTERESTS.

PETROLEUM, WATER-SUPPLY, AND

SCIENTIFIC SUBJECTS GENERALLY.

JAMES W. BRYANT, EDITOR AND PROPRIETOR.

W. S. SHERMAN, PUBLISHER.

PROF. C. ELTON BUCK, CONSULTING CHEMIST.

SUBSCRIPTION—Three dollars per annum in advance.

ADVERTISEMENTS.—One dollar per inch in column for each insertion. Large space or long time by special contract.—Payable in advance.

☞ All communications to be addressed to "The Editor," No 1 Spruce Street, New York.

AGENTS.

NEW YORK—JOY, COE & Co., No. 1 Spruce street.

PHILADELPHIA—JOY, COE & Co.. No. 441 Chestnut st. cor. 5th.

Germany.....B. WESTERMAN & Co., of New York.

Great Britain....TRUBNER & Co., 60 Paternoster Row, London.

France.....LE JOURNAL DE L'ECLAIRAGE AU GAZ, 25 Boulevard Poissonnière.

☞ *Private Office, No.* 111 *Pearl street.*

☞ *Publishing Office, No.* 1 *Spruce street.*

The Mining and Petroleum Standard AND AMERICAN GAS-LIGHT JOURNAL,

PUBLISHED ON 2D AND 16TH OF EVERY MONTH.

JAMES W. BRYANT, ... EDITOR.

MONAY, APRIL 17, 1865.

☞ Mr. Wm. Davidson, of the firm of E. V. Haughwort & Co., 488, 490 and 492 Broadway, has received the appointment of Inspector of Gas Meters for the State of New York. His office for the transaction of business connected with that appointment, is at the above address.

CARRINGTON & Co.– The time having arrived for Spring purchases, we would call the attention of our readers to the advertisement of Messrs. Carrington & Co., purchasing agents. Their long experience and thorough knowledge of every place of business in the city, and their established character for integrity and promptness, entitle them to full confidence, and parties in the interior wanting goods or articles of any description, can be supplied through their commission house, at the lowest trade prices, and their commissions for buying are small.

See advertisement in another column.

ORNAMENTAL IRON WORKS.—We have recently paid a visit to the depot of the New York and Philadelphia Iron Works, at No. 524 Broadway, of Messrs, Chase & Co., and was surprised at the many varieties of Garden Adornments, Cemetery Embellishments, and Wire, Cast Iron and Bronze Railings for enclosing public squares, lots, offices, &c., that was there shown to us. The stock on hand at this establishment embraces every conceivable variety of design, many of which are elegant in their construction and of the most durable character. Their supply of Iron Furniture, Bedsteads, &c., is very large and well worth the attention of those who desire to purchase this class of goods. We invite attention to their advertisement in another part our paper.

☞ The Report of the Philadelphia Gas Oompany which we publish under our Gas head, did not reach us at the time it was forwarded to us. We have been kindly furnished a copy by the officers.

JUSTICE.

It is with much satisfaction we observe that the Legislature of this State has before it an amendment to the charter of the Manhattan Gas Company of this city, allowing them to charge $3,50 per thousand cubic feet for gas—it being the same price now charged by the other Gas Companies in this city. We referred to the subject of "Gas Companies and Gas Consumers," in our number of 16th of February, showing the injustice of holding corporations, or individuals, to contracts where ruin would ensue by their fulfilment, or incapacity to do so result from an adherence to strict terms. Everything should be relative in business matters. If from *any cause*, labor and cost of material advances, the price of the product should advance in proportion, and the consumer be willing to pay that price The fact of the great advance in the price of coal has been brought to the notice of *all*, and it is unreasonable to hold Gas Companies to their old rates when the material used by them has increased to three times the old price. When the price of coal is lower, we are sure all Gas Companies will reduce the price of gas correspondingly.

Abraham Lincoln is dead!

Columbia bowed down with grief! A wail of woe wells up from the Nation's heart!

ABRAHAM LINCOLN, President of the United States, was assassinated in the City of Washington, on Friday, April 14th, 1865.

"He filled the Nation's eye and heart,
An honored, loved, familiar name:
So much a brother, that his fame
Seemed of our lives a common part!"

THE BITUMINIZED PIPE.—We have received specimens of pipe manufactured by the Boston Bituminized Pipe Company, which are at our private office, No. 111 Pearl street, and can be inspected by parties interested in them. This pipe, of French invention, consists of a mass of layers of stout paper, cemented by an artificial bitumen, so as to form pipe of different sizes, which is internally glazed by a compact, brilliant coating of bitumen and earths, as a protection from the action of water, a diminution of friction in fluid passing, and to prevent incrustations or deposits. Experiments show that the exterior of the pipe is not acted upon by moisture or water, and it is known that bitumen is one of the most permanent bodies when buried in the earth, or surrounded by decaying matter. The company have certificates from scientific and practical men who testify both to its utility and durability, among whom is Albert Stanwood, Esq., late superintendent of the Boston Water Works, who in his letter to them, says:

"While superintendent of the Boston Water Works in May, 1863, I was furnished with a piece of Bituminized pipe for the purpose of testing its relative strength as compared with iron; and, under my own observation, found it to sustain the enormous pressure of 500 lbs. to the square inch, without destroying or injuring the pipe. For all practical purposes our maximum test for iron pipes was 250 lbs. to the inch—equal to 543 feet head of water. I also submitted it to a most thorough test as to whether or not it would impart any taste or impurity to water, and found, after six week's trial, that it did not in the slightest degree. From its indestructibility, non liability to oxydation, great strength, lightness, and cheapness, I have no hesitation in saying that this Pipe has in my judgment many and very important advantages over any and all other kinds of pipes used for similar purposes."

See advertisement in another column.

Little drops of rain brighten the meadows, and little acts of kindness brighten the world.

THE PETROLEUM CHRONICLE AND MINING GAZETTEER.—We hail with pleasure the above entitled Journal, and from the appearance of the first and second numbers, (March and April,) we think it will fulfill the promises and engagements of the publishers, Messrs. Davega & Herbert, No. 30 Broad street. From the tone and apparently intelligent character of this journal we believe it will be well patronised, being entirely different from the "mushroom" papers attempted to be imposed upon the public as standard authority in Petroleum business. It is published monthly at $5 per annum.

THE PHILADELPHIA GAS WORKS.—At an election held on Friday evening, March 24, at the Philadelphia Gas Works, the following named gentlemen were elected to fill the offices named:

JOSEPH EMANUEL, Esq., Chief Engineer.

First Assistant Engineer, A. Myers; Second Assistant Engineer, W. R. Park; Register, Samuel M. White; Superintendent of Distribution, John A. Miskey; Meter Inspectors, to attend to meters out of order, Matt. Bavard, Thomas Shoemaker, Albert Enick, John Dougherty; Clerk, George Schock; Glazier, Kennedy Brown: Out of Order Clerk, George Henry.

Atlas of the Oil Regions of Pennsylvania, from actual survey, under the direction of E. W. Beers, C. E.; assisted by Beech Nichols, J. M. Beers, A. Leavenworth, C. S. Peck, C. A. Curtis, and Geo. Stewart—with a few facts relating to Petroleum historically, scientifically and commercially reviewed, by Iram C. Michels, Editor of the Philadelphia Coal Oil Circular and Petroleum Price Current. Published at 43 John street.

This is a most extensive and elaborate got up affair, and has required, and received, a vast amount of labor and intelligence to bring it out. It is, certainly, a very valuable work, and should be in the possession of every man who is interested in Petroleum; as a reference it is the most indisputable authority, and the thirty-six maps which are beautifully and artistically colored, are so plainly designed, that "he who runs may read." As a work of merit, and art as well, we commend this Atlas to all who seek information on the subject of oil land and their location in Pennsylvania.

IMPORTANT NOTICE.

TO ADVERTISERS.—Our paper offers a superior medium as an advertising agent, to all those who manufacture or sell machinery or appliances of any kind for Gas, Mining, Water, Sewerage, the production or purification of Oils, &c. &c., not so much on account of a wide-spread circulation, as from the fact that it goes directly to the hands of those who are constantly using and requiring machines and improvements for these branches, and who look hrough our columns for information where to procure them. The class of people who read our paper not only peruse our pages of reading matter, but read the advertisements as well, for the reason that they are directly interested in all things pertaining to their business. We therefore ask, with confidence that we can do them justice, all parties having machinery or improvements of any kind for either of the objects to which our paper is devoted, to send in their advertisements and avail themselves of these advantages. It will be observed that our terms for advertisers are very reasonable.

PETROLEUM REVIEW.

April 1,—Crude is in moderate demand and steady; sales of 1,200 bbls. at 33 to 33½ cts. Refined is quiet at 52 to 53 cts. for Bonded, and 72 to 73 cts. for Free.

April 4,—The market for Crude is more active and firmer; sales of 1,800 bbls. at 33 to 34 cts. Refined are quiet at 53 to 54 cts. for Bonded, and 70 to 71 cts. for free.

April 5,—There has been only a moderate inquiry for Crude since our last; prices have fluctuated considerably and have declined, but at the close there is a better demand and a firmer feeling; we note sales today of 1,100 bbls. at 34 cts. on the spot; 2,000 bbls seller May, at 33 cts. and 1,000 bbls. buyer May, at 34 cts. Refined has been extremely dull, closing quiet at 53 cts. for bonded, and 70 to 71 cts. for Free.

April 6,—Is firm at 34½ cts. for Crude; 53 cts. for Refined in bond, and 71 cts. for do. free.

April 7.—Is in less active demand and prices are without change. We quote Crude at 34 cts. Refined in bond, 53 cts. and do. free, 71 cts.

April 8,—Is only in moderate demand, but prices are without change. We quote ae 34 to 34½ cts. for Crude 52 to 53 cts. for Refined in bond, and 72 to 73 cts. for do. free.

April 10,—Crude is in moderate demand at previous prices; sales of 300 bbls. at 34 to 35 cts. Refined are quiet. We quote bonded at 52 to 53 cts. sales of 50 bbls. free at 71 cts.

April 11,—Crude is only in moderate demand, and steady at 34 cts. Refined is quiet and rather scarce we quote at 51 to 52 cts. for bonded, and 71 to 72 cts for free.

April 12,—The market for Crude is moderately active, but prices are scarcely so firm; sales of 500 bbls at 34 to 35 cts. Refined are dull at 51 to 52 cts. for bonded, and 71 to 72 cts. for free.

NEW YORK MINING EXCHANGE.

New York, April 15, 1865.

	Bid.	Asked		Bid.	Asked
Copper Stocks.			***Gold Stocks.***		
Aztec	7⅜	9	Benton	1	1¼
Bedford	1	1⅛	Consol'd Gregory	25	28⅜
Boston	4⅛	5⅜	Corydon	—	3
Caledonia, A. P.	10	12	Gunnel	3⅜	4⅛
Canada	3¾	4	Great Western	—	8
Carp Lake	3	5	Hope	—	9
Central	65	70	Isaac's Harbor	⅝	⅞
Columbian	—	24	Manhattan	—	9
Copper Falls	34⅜	38	Mariposa	44	44¾
Clifton	—	$1	Montana	⅜	1
Dacotah	—	5⅜	New York	2⅛	3
Derby	⅜	1⅜	N. Y. & Nova Scotia	⅜	1⅜
Douglass	—	—	Quartz Hill	9¾	10
Evergreen	18⅜	20	Quicksilver M'g Co	81	82
Flint Steel River	12	13⅛	Rocky Mountain	—	10⅜
Frue	2¾	5	Smith & Parmelee	7	12
Grand Portage	—	—			
Hancock	12⅜	14	***Coal Stocks.***		
Hamilton	—	6	American	98	100
Hilton	5	6	Ashburton	—	25
Hudson	1	2	Central	62	65
Huron	32	33	Cumberland	61	∞
Indiana	8¾	9¾	Del. & Hud. Canal	206	208
Isle Royale	20	20⅜	*Hampshire & Balt.	104	110
Keweenaw	—	6	Pennsylvania	213	215
Knowlton	7	10			
Lafayette	1	2	***Lead Stocks.***		
Manhattan	—	—	Bucks County	⅝	⅞
Mendota	—	—	Clute	1⅝	1⅞
Merrimac	4⅜	5⅜	Erie	—	20
Minnesota	33	37	Macomb	3¾	5
New York, A. P.	2	3⅛	Plancentia Bay	1¾	1⅞
N. J. Consolidated	4	4⅜	Sussex	⅜	⅝
Norwich	—	6	Wallkill	3¾	6
Ogima	5	6¾			
Ontonagon	3	4	***Iron Stocks.***		
Penn	—	11⅜	Copake	8	10
Providence	1⅜		French Creek	⅜	1
Quincy	96⅜		Teal Lake	4⅜	6
Reliance	1⅛				
Rockland	12⅜		***Miscellaneous.***		
Superior	8⅝		Rutland Marble	17	20
Sharon Consolidated	—				

* *Ex. div.*

A SITUATION IS WANTED

As Superintendent of Gas Works, by an experienced and capable Gas Engineer, who will give satisfactory references as to his integrity and ability. He has had six years practical experience in the management of Coal and Resin Gas Works. Address,

R. Horton, care American Gas Light Journal, No. 1 Spruce street, N. Y. 126.

U. S. MAIL LINE FOR CALIFORNIA,

via Panama, under convoy of a United States war steamer throughout the Atlantic voyage.

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As a GAS PIPE, we say it has no superior. The Lowell Gas Light Co., purchased and laid some of this Pipe last year, and have likewise subjected samples to a test of four month's duration in their dry lime purifiers, with the most satisfactory results, in fact establishing beyond a doubt, its perfect adaptation to the wants and requirements of Gas Companies, specimens of which, together with the statement of O. E. Cushing, Esq., Agent Lowell Gas Light Co., who made these experiments, I shall be pleased to show, and give all other needed information, by applying in person, or by letter, to JOHN L. WEBSTER, Treas.,

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No Wood-work to Swell or Split. No Thumb-screws to get out of order. Warranted with or without Cog wheels.

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That thumb-screws and fastenings cause *delay* and *trouble* to regulate and keep in order.
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That it will wring a thread or a bed-quilt *without alteration.*

We might fill the paper with testimonials, but insert only a few to convince the skeptical, such there be; and we say to all, *test* Putnam Wringer. Test it *thoroughly* with *any* and *all* others, and if not entirely satisfactory, return it.

PUTNAM MANUFACTURING CO.—*Gentlemen:* I know from practical experience that iron well galvanized with zinc will not oxydize or rust one particle. The Putnam Wringer is as near perfect as possible, and I can cheerfully recommend it to be the best in use. Respectfully yours,
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This Meter combines
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Has all the flavor of OLD GOVERNMENT JAVA, and is but half the price; and also that

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has twice the strength of Java, or any other Coffee whatever and wherever used. In our first-class hotels and steamboats—the stewards say there is a saving of 50 per cent.

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KENT'S EAST INDIA COFFEE.
I advise my patients to drink it universally, even those to whom I have hitherto prohibited the use of Coffee.
The PRINCIPAL OF THE NEW YORK EYE INFIRMARY says: "I direct all the patients of our Institution to use, exclusively,

KENT'S EAST INDIA COFFEE,
and would not be without it on any account.

The Rev. C. LARUE, an eminent clergyman of the M. E. Church, now stationed at Halsey's Feet, Newark, says of

KENT'S EAST INDIA COFFEE,
"I have used it nearly a year in my family, and find it produces no ache of the head or nervous irritation as in the case of all other Coffees. It is exceedingly pleasant, and I cordially recommend it to all clergymen and their families."

KENT'S EAST INDIA COFFEE
is used daily by the families of Bishop Ames, Bishop Baker, Bishop James, and many of the most distinguished clergymen and professional men in the country."

Beware of Counterfeits!
and be sure that packages are labeled
KENT'S EAST INDIA COFFEE,
154 Reade Street, New York,
as there are numerous counterfeits afloat under the name of "Genuine East India Coffee," "Original East India Coffee," etc., put forth by imposters to deceive the unwary.

In 1 lb. packages, and in boxes of 30, 60, and 100 lbs., for Grocers and large Consumers. Sold by Grocers *generally.*

Orders from Country Grocers solicited, to whom a very liberal discount will be made.

Wholesale Agents: Hoeflich & Molan, and W. J. Heiss & Bro., Philadelphia; Francis H. Perry, Providence; A. L. Waite & Co., Boston; Pynchon & Lee, Springfield, Mass; S. N. Callender, Buffalo; Gordon McMillan & Co., Cleveland; A. A. Colter & Co., Cincinnati; J. & J. W. Bunn, Springfield, Ill.; H. B. Shields, Corydon Ind.; and C. C. Garber, Chicago.

The Am. Adv. Agency, 308 Broadway, N. Y., will receive orders for the above named Coffee.

Business Dep., E. ALVORD. | *Corresp. Dep.,* FOWLER & WELLS.

GROVESTEEN & CO.,

PIANO-FORTE MANUFACTURERS.

499 BROADWAY, NEW YORK.

The attention of the public and the trade is invited to our New Scale Seven Octave Rosewood Piano-Fortes, which for volume and purity of tone are unrivalled by any hitherto offered in this market. They contain all the modern improvements, French, grand action, harp pedal, iron frame, over-strung bass, etc., and each instrument being made under the personal supervision of Mr. J. H. Grovesteen, who has had a practical experience of over thirty years in their manufacture, is fully warranted in every particular.

THE "GROVESTEEN PIANO-FORTE"

Received the highest award of merit over all others at the Celebrated World's Fair!

where were exhibited instruments from the best makers of London, Paris, Germany, Philadelphia, Baltimore, Boston, and New York; and also at the American Institute for five successive years, the gold and silver medals from both of which can be seen at our warerooms.

By the introduction of improvements we make a still more perfect Piano-Forte, and by manufacturing largely, with a strictly cash system, are enabled to offer these instruments at a price which will preclude all competition.

PRICES.

No. 1, Seven Octave, round corners, Rosewood Plain Case, $275.
No. 2, Seven Octave, round corners, Rosewood Heavy Moulding, $300
No 3, Seven Octave, round corners, Rosewood Louis XIV, style $325, a fac-simile of the accompaning cut.
TERMS—NET CASH, IN CURRENT FUNDS. Descriptive Circular sent free.

LILLIE'S

CELEBRATED

Chilled and Wrought Iron Safes,

WROUGHT IRON FIRE-PROOFS,

LOCKS AND VAULT DOORS.

These Fire-Proofs are manufactured to supply a demand for Security Against Fire, less expensive than my celebrated and superior Chilled and Wrought Iron Burglar and Fire-Proof Safes.

They furnish similar and equal security to the Safes generally manufactured in the different cities, but are SUPERIOR to them in their Fire-Proof qualities and durability, the iron being effectually protected from rust in any climate, and the Fire-proof not subject to lose its utility by age. This is an important advantage gained to the purchaser, as Safes often rust out and become worthless in two or three years.

To substantiate my position, those purchasing these Fire-Proofs are at liberty, by giving me due notice of time and place of trial, to test them by fire with any other Safe of the same size; and should they not prove superior, I will refund the money, or a new Fire-Proof, as the purchaser may decide.

LIST OF SIZES & PRICES OF WROUGHT IRON FIRE-PROOFS

	Outside.			Inside.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
6	40	31	27	31	21	15	$150
5	34	27	26	24	21	14	125
4	31	27	25	22	18	13	110
3	30	24	24	21	15	12	100
2	28	22	23	20	14	12	75
1	24	19	20	17	11	10	50

Sample of Fire-Proof Safe at Office of the Am. Ad. Agency, 389 Broadway, N. Y.

PRICE LIST.

LILLIE'S CELEBRATED CHILLED & WROUGHT IRON SAFES.

BANK, FIRE, AND BURGLAR SAFES.
Folding Doors, D Lock.

	OUTSIDE.			INSIDE.			
No.	Height.	Width.	Depth.	Height.	Width.	Depth.	Price.
	In.	In.	In.	In.	In.	In.	
1	66	50	29	54½	39	18	$950
1½	59	50	26	48	39	15	800
2	58	44	27	42¾	33	15	600

MERCANTILE F AND B SAFES.
Folding Doors and Monitor Locks.

3	50	42	27	40	32	16	$500
4	46	42	27	36	32	16	450
4½	38	46	27	28	36	16	450
5	42	38	27	31½	27½	15	350

Single Doors and M. Lock.

6	36	35	26	27½	23½	15	$250
7	34	31	26	24	21	14	200
8	31	28	24	21	18	13	175
9	30	24	24	21	15	12	140
10	26	23	22	19½	18½	12	120
11	24	20	18	17	17	10	100

HOUSE SAFES.

SIDE BOARD	$600
DINING ROOM	350
PANTRY (No. 1)	275
PANTRY (No. 2)	150
DUODECAGON BANK LOCK	100
MONITOR SAFE do.	50
SAFE do.	10

NATIONAL BANK SAFES,
With 2 Inside Burglars and 1 D and 2 M Locks.

	OUTSIDE.			INSIDE.			
No.	Height.			Hei	Width.	Depth.	Price.
	In.			In.	In.	In.	
1	68			55	39	18	$1,200
2	61			48	39	18	1,050
3	57			42½	33	18	900

BANK VAULT BURGLAR SAFES,
With Folding Doors and D Lock.

0	68	58	27	64	48	20	$1,000
0½	61	53	27	55	46	20	800
1	57	47	27	49	40	20	600

BANK VAULT BURGLAR SAFES,
Single Doors and D Lock.

2	53	32	26	49	28		
3	42	36	22	38	32	19	99
4	36	31	20	32	27		0
5	30	24	18	26	20	14	

BANK VAULT DOORS AND FRAMES,
D and S Lock.

No.	Height clear.	Width clear.	Depth adjustable.	Price.	Weight.
	In.	In.	In.		
1	72	27	20	$400	3,000
2	72	27	20	275	1,500

Orders received and filled at net cash prices, by the AMERICAN ADVERTISING AGENCY, 389 Broadway, New York. All Safes shipped from Troy free of cartage.

Business Depart., E. ALVORD. *Corresponding Depart.*, FOWLER AND WE

WEST'S IMPROVED PUMP.

Anti-Freezing, Double-Acting, Forcing, and Lifting

These Pumps have now been in general use a number of years, and give better satisfaction than any other, and are recommended as

THE BEST!

by CAPTAIN ERICSSON and other eminent engineers. We can refer to thousands using them, a guarantee that all will recommend them. They are more simple in construction, and work easie and cost less than all others.

"Our readers will find the double acting, improved pump of J. D. West & Co., one of the best in the market. It is very simple, works to a charm, so that any child may use it; throws a steady, continuous stream, and does not freeze in the coldest exposures, and is unusually cheap. We ask this knowingly, and give the testimony of our own accord, without the knowledge or request of the proprietor "—*New York Evening Post, July 1st*, 1863.

"J. D. WEST & Co.: We are pleased to state that the Pumps we had of you about a year ago, have been in constant use, twelve hours each day, and raise for the use of our woolen factory, about 180 gallons per minute. They work with but little power, compared with pumps we have used before, and do not get out of repair, and are satisfactory in all respects.

"DUNLAP MANUFACTURING CO."

Solon Robinson to the Farmers' Club. Jan. 23.

"No farmer who owns a well or cistern can possibly afford to be without an iron pump. It should be a once a suction and force pump—a perfect little fire engine—such a one known as 'West's Improved Pump.' I speak of this Pump because I happen to know it....to be very simple, durable, powerful and cheap, and it don't freeze up, nor get out of order once a year....I know this, and think I may be doing the farmers good by speaking of it.....A boy ten years old can work it, and throw a continuous inch-and-a-quarter stream....It can be made to work in deep wells as well as in shallow ones."

"GREAT NECK, L. I., 1860.

"I have used this Pump for one summer and winter, exposed to the northwest wind coming over Long Island Sound, being the coldest possible exposure, and at no time did it freeze, nor were we unable at any time to pump water with great ease.

H. B. MC ILVAIN."

"The undersigned having to use "West's Improved Pumps," cheerfully recommend them as simple, durable, and powerful in raising and throwing water, and for their ease of action, security against frost, and low price, we believe them superior to all others.

"WARREN LELAND, Met. Hotel, N. Y.
"J. W. POMEROY, Yonkers, N. Y.
"JOHN MESSEREAU, N. Y.
"DOMINICK LAWRENCE, Westchester."

From the New York Observer.

"We have had in use for months past one of West's Pumps, which has given us more satisfaction as a force and lifting pump than any we have ever used. It is one of great power, and well adapted for ship's decks, mines, factories, greenhouses, graperies, etc. *The Mining Chronicle and Railway Journal* says: 'It is recommended for its extreme simplicity of construction, great strength, and consequent durability and cheapness of repair. There is no stuffing-box—the pressure being held by a cup packing, like that upon the working-piston, working in a cylinder, fitted for the purpose within the upper air chamber—which we think a great improvement, as stuffing is so liable to be deranged and leak under strong pressure, to say nothing of the loss by friction incident thereto. It has also two air-chambers; thus the action of the valve is cushioned upon both sides by air—preventing water-hammer and vacuum-thump. The valves are very accessible and simply and cheaply repaired. They work much easier than any pump we have ever seen; the 4-inch cylinder being worked by children in wells 100 feet deep, and as they are extremely cheap, as well as simple and strong, we freely recommend them.'"

"CAMBRIDGE MINE, N. C., June 15, 1863.

"J. D. WEST & Co.—Gents: The Pump which I ordered for our mine is received, and put to work in our underlay shaft, which we are sinking. We find that one man will, with ease, lift 50 gallons per minute. We lifted in three and a half hours all the water in the shaft, which measures seven by twelve feet and thirty feet deep, and it was full when we commenced. It answers our expectations in every respect, and our workmen are highly pleased with it. It will do great service with but trifling expense for repairs.

"Yours, respectfully, BURR HIGGINS."

"This may certify, that I have been using, at my manufactory, for the last four years, 'West's Improved Pumps.' I now have in use three of said Pumps, one of which is kept constantly at work, 24 hours of each day (save Sundays), and has been running for the past two years. I pronounce them, unhesitatingly, the best Pumps that have been brought to my notice, having used many others previously. They are simple in their construction, and not easily disarranged.

"N. Y., Oct. 10, 1859. JAS. A. WEBB."

We have plenty more such certificates, but think these are enough. For Pumps, Hose, Pipe, etc., address or call upon

J. D. WEST & CO., 179 Broadway, New York.

Orders may be sent through the AMERICAN ADVERTISING AGENCY, 389 Broadway

AMALGAM BELLS,
AMALGAM BELLS,
AMALGAM BELLS,
AMALGAM BELLS

At prices within the reach of every Church, School, Cemetery, Factory, or Farm in the land. Their use throughout the United States and Canadas for the past six years has proven them to combine most valuable qualities. Among which are TONE, STRENGTH, SONOROUSNESS, and DURABILITY OF VIBRATION, unequalled by any other manufacture. Sizes from 15 to 5,000 lbs., costing TWO-THIRDS LESS than other metal, or 25 cents per pound, at which price I warrant them twelve months. Old bell metal taken in exchange, or bought for cash. Send for a circular to the manufacturer,

JOHN B. ROBINSON,
No. 36 DEY STREET, NEW YORK.

List of Academy, Steamboat, Fire-alarm, and Church Bells, with particulars as to Weight, Sizes, Price of Bells, Hangings, etc.

Weight of Bells.	Diameter.	Price of Bells without Hangings.	Price of Patent Hangings.	Price of Bell and Hangings complete.
225 lbs.	26 inches.	$56 00	$15 00	$71 00
275 "	42	69 00	18 00	87 00
375	36	94 00	22 00	116 00
450	84	112 00	25 00	137 00
600	02	150 00	30 00	180 00
750	39	188 00	35 00	225 00
1,000	54	250 00	42 00	292 00
1,200	48	300 00	45 00	345 00
1,400	50	350 00	50 00	400 00
1,600	52	400 00	54 00	454 00
1,800	55	450 00	60 00	510 00
2,000	58	500 00	62 00	562 00
2,500	60	625 00	72 00	697 00
3,000	63	750 00	85 00	835 00
3,500	66	875 00	87 00	962 00
4,000	69	1,000 00	100 00	1,100 00
4,500	72	1,125 00	113 00	1,238 00
5,000	75	1,250 00	125 00	1,375 00

List of Prices, Weights, and Sizes of Farm, Hotel, Steamboat, Schoolhouse, Shop, and Factory Bell.

These Bells are fitted with Yoke, Standard's Crank and Bolt, complete for use.

Weight of Bell and Hangings.	Diameter.	Cost of Bell and Hangings complete.
15 lbs.	7 inches.	$3 75
20	8¼	5 00
35	10	8 75
50	13	12 50
75	16	18 75
100	18	25 00
150	20	37 50
200	22	50 00
250	24	62 50

Larger Sizes made to Order at 25 cents per pound.

Guarantee.—All Bells sold at the above prices WARRANTED against breakage by fair ringing, for TWELVE MONTHS from time of purchasing. Should one fail, a new bell will be given by returning the broken one.

Orders may be sent through the AMERICAN ADVERTISING AGENCY, 389 Broadway, New York.

In case a Bell breaks after the expiration of the Warrantee, I allow HALF PRICE for the old metal.

JOHN B. ROBINSON, 36 Dey Street, N. Y.

PRINCE'S METALLIC PAINT,

AN INDESTRUCTIBLE COATING FOR

IRON, TIN, and WOOD.

It consists of seventy-two parts Oxide of Iron, and twenty-eight parts Cement Lime Stone in the one hundred pounds.

It has much more body than red or white lead. It is warranted perfectly water and fire-proof and to withstand a greater heat on metals, without scaling, than any other paint in use.

It is a perfect cover for all kinds of iron, tin, or wood-work, out-houses, and canvas coverings. prevents and arrests the corrosion of metals, and is not affected by the action of salt, gases, acids or ammonia.

It hardens under water, as has been fully demonstrated by its application to gas-holders, by many of the largest gas companies in the United States; which companies having thoroughly tested its properties as herein claimed, pronounce in its favor over any other paints in the market, even though sold at double its price.

As a coating for patterns of iron or wood, when mixed with shellac, it is much superior to beeswax, oil, or shellac alone, as has been proven at the large founderies in the country.

For patching boilers and making joints, it is considered superior to red lead, or any other preparation.

For cleaning metals it takes the place of crocus, rouge, and emery, being better and cheaper.

This Paint requires no more oil than dry lead or zinc, and much less than the ordinary mineral paints. It is free from any waste, and possesses a spreading and covering power unequaled.

Terms, by the Barrel or Half Barrel, Five Cents per Pound.

A liberal discount made to parties purchasing by the ton.

A Barrel or Ton will be forwarded to any gas companies desirous of testing its qualities, for which there will be no charge if it does not give entire satisfaction as being the cheapest and most durable of all other Paints in the market.

Also, Prince's Imperial Black Paint, and Prince's Protoxide of Iron.

DANIEL SLOAN, General Agent,
115 LIBERTY STREET, NEW YORK.

Local Agent—CALVIN GAY, 29 Doane st., Boston.

THE STANDARD Gold Company
OF COLORADO.

DIRECTORS,
ROBERT BOWNE,
EDWARD WILLIS,
LIVINGSTON SATTERLEE,
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S. A. BANKS,
SYLVESTER TAYLOR.
President, ROBERT BOWNE.
Secretary, F. A. MITCHEL.

MINES on FISK LODE,
BOBTAIL LODE,
GROUND HOG LODE,
ENTERPRISE LODE,
and others,
In all, 8,625 feet (linear), and large water powers and mill sites.

Capital issued, 40,000 shares, at $10 per share.

A limited number of shares are offered at the low SUBSCRIPTION PRICE (having been reserved for their customers), by

WILLIAMS & MITCHEL, 12 Wall Stree

SAFEST AND CHEAPEST SYSTEM OF INSURANCE.

WASHINGTON
INSURANCE COMPANY
172 BROADWAY,
Cor. Maiden Lane, NEW YORK.

CASH CAPITAL, - - - $400,000.
Assets, June 1, 1864, - - - 600,000.

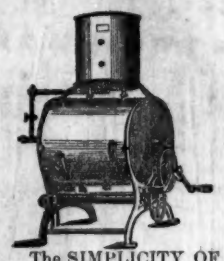
Scrip Dividend, 1863, - - 60 per Cent.
Scrip Dividend, 1862, - - 60 per Cent.
Scrip Dividend, 1861, - - 60 per Cent.

The Policies entitled to participate receive 75 per cent. of net Profits.

Insures Buildings, Merchandise, Furniture, Rents, Leases, against loss or damage by FIRE, and MARINE RISKS on LAKES, RIVERS and CANALS.

GEO. C. SATTERLEE, President.
HENRY WESTON, Vice Prest.
WM. K. LOTHROP, Secretary.
WM. A. SCOTT, Ass't Secretary.

DRAKE'S
PATENT
AUTOMATIC GAS MACHINE.



THIS MACHINE, which has been in constant use for more than two years, is now acknowledged to be the

Most Convenient,
Simple, and
Efficient Method

OF LIGHTING BUILDINGS OF ALL KINDS, out of the reach of regular gas-works, ever brought to public notice.

The SIMPLICITY OF THE APPARATUS, its ENTIRE FREEDOM FROM DANGER, the LITTLE ATTENTION REQUIRED, the EASE WITH WHICH IT IS MANAGED, and THE CHEAPNESS and SUPERIORITY OF THE LIGHT, has gained for it the favorable opinion of those acquainted with its merits.

The Machine takes up but little room; no disagreeable odor is experienced in its use; no fire is applied to the apparatus at all; it can be attached to ordinary gas-pipes used for coal-gas, and is burned through the same kind of fixtures.

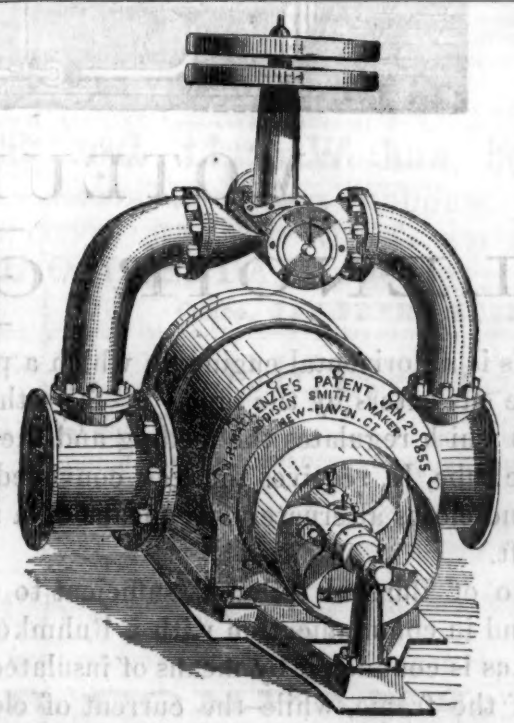
These Machines are manufactured in Boston, by the AU OMATIC GAS-MACHINE CO., and are for sale at their Store, 78 Washington s eet, Boston, and also at the Agency, MITCHELL, VANCE & CO.'s, No. 620 Broadway, New York

For further particulars, address—

MITCHELL, VANCE & CO.,
620 BROADWAY, NEW YORK CITY.

SMITH & SAYRE,
Sole Proprietors and Manufacturers of

THE MACKENZIE PATENT GAS EXHAUSTER AND COMPENSATOR.



They are made to pass from 4,000 to 150,000 cubic feet of gas per hour; will increase the p tion and illuminating power of the gas, and add very much to the durability of the retorts, e clay or iron. The Compensator obviates entirely the necessity of water-joints, is compact, dur cleanly, not liable to get out of order, self-acting, quiet, and certain in its operation.

We are also sole proprietors and manufacturers of the

MACKENZIE PATENT BLOWER, PATENT CUPOLA AND SMELTING FURNACE.

The Blower is a Force Blast machine, durably built, and can be driven with one-third the powe required to drive the ordinary Fan. The Cupolas are manufactured in sizes to melt from 1 ton to 20 tons per hour, will save one quarter of the time required by the old style Cupola, and 33 per cent. uel. Address

SMITH & SAYRE, 458 Broadway, New York.

SATTERLEE & CO.,
BANKERS
AND
STOCK BROKERS,
49 Exchnge Place.
NEW YORK.

G. R. SATTERLEE, H. TRACY ARNOLD,
H. A. BOSTWICK, LIVINGSTON SATTERLEE.

Mining Stocks bought and sold at the Regular, Mining, Boston and Philadelphia Boards.

ALBERT H. NICOLAY,
STOCK BROKER AND
AUCTIONEER,
No. 52 William Street,
NEAR WALL ST., NEW YORK.
Special attention given to the Buying and Selling of Gas-Light Companies' Stocks.

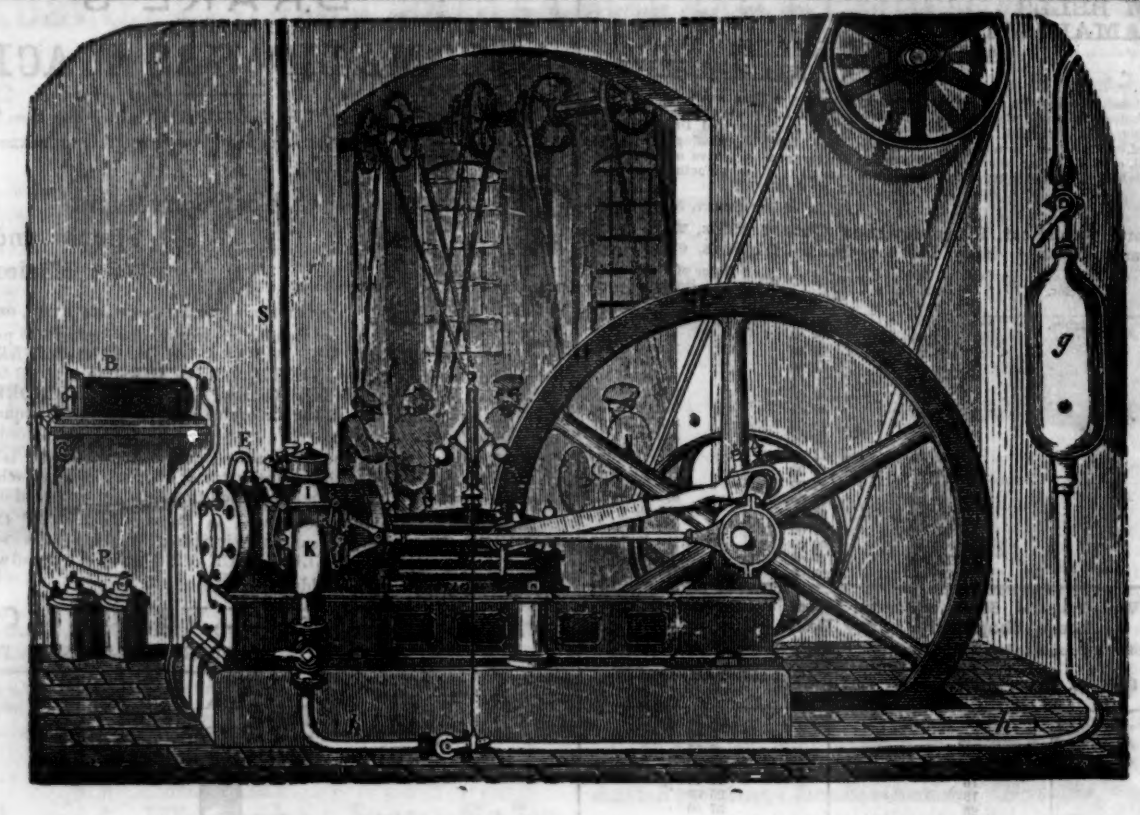
PARTICIPATION.
ÆTNA FIRE INS.
COMPANY OF NEW YORK,
NO. *170* BROADWAY.

CASH CAPITAL, $200,000. CHARTERED 1824.

The insured receive seventy-five per cent. of the net profits annually, without incurring any liability. When preferred, a discount will be made in lieu of participation in profits.

Scrip Dividend of 1861, - - 50 per cent.
Scrip Dividend of 1862, - - 50 per cent.
Scrip Dividend of 1863, - - 50 per cent.

JACOB BROUWER, *President.*
H. C. BEACH, *Secretary.*
WM. BARBOUR, *Asst. Sec.*



MOTEUR—LENOIR.

LENOIR GAS ENGINE.

This is a horizontal engine, in which a piston, by a connecting rod drives a horizontal shaft.

The gas enters by the pipe "h" from the regulating reservoir "g," (made of vulcanized india rubber,) which regulates the feeding and the branches connected with the gas-pipe.

The tube, K, receives the gas conveyed by the pipe "h," and conducts it to the valve, which opens and closes alternately, by means of a rod moved by an eccentric wheel fastened to the end ot the shaft.

Two of Bunsen's piles, P, sufficient to produce the electricity are placed at a little distance from, and in communication with a Ruhmkorff electric apparatus, B. The electric current of this apparatus is conducted by means of insulated wires to the electricity distributor "m," placed on the front of the frame, while the current of electricity and its arrival at the inflammator, inserted at each end of the cylinder, is directed by the movement of the piston-rod, which, by an ingenious combination, impels a small movable slide before the distributor.

The burnt gas, after having performed its functions in the machine, escapes, by means of a valve, through a pipe, S, and the water designed to cool the interior of the cylinder enters through a double passage, by means of a pipe situated near the escape-valve, and goes out by the pipe, E.

A two horse and a half horse Engine are now in practical operation at the Dry Dock Iron Works, No. 435 East Tenth street, near East River, New York, where they are being manufactured, and those interested are invited to call and examine them.

THE LENOIR GAS ENGINE

Requires no Fire and makes no Smoke,

No Noise, no Dirt, and is thoroughly safe.

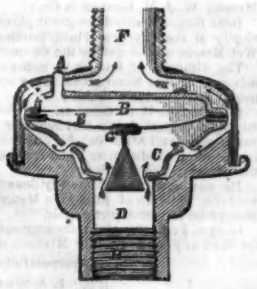
It is propelled by the expansion of Air, dilated by the combustion of Gas within the cylinder, ignited by the

ELECTRIC SPARK

NOTICE TO GAS COMPANIES AND GAS CONSUMERS.

THOMPSON'S PATENT GAS CONTROLLER,

The only Self-Acting Gas Controller, Regulator, and Burner Combined which has ever been invented, or known to science.



THE PRINCIPLE UPON WHICH THE THOMPSON'S AUTOMATIC GAS CONTROLLER works is one well known to mechanics, and is simple in its operation.

Within the circumference of a small cylinder below the burner is placed a conical valve attached to a movable diaphragm. The diaphragm rises or falls as the pressure of gas from the pipe is lesser or greater, and the valve acts upon the valve-seat with such regularity of movement that in a difference of from five-tenths of an inch pressure to five inches the variation in flame is hardly perceptible.

The simplicity of its machinery and the nature of the material used in its construction insure its regular action and durability.

In consequence of the uniform quantity of gas which passes the Controller to the burner there is no waste, and a steady, soft flame is produced, which is important to all who read, write, or work by gaslight. The unsteady flickering blaze which invariably exists when the pressure of gas is beyond the requisition for consumation, has injured the sight of thousands who have been subjected to it.

For street lamps these Controllers are especially valuable, because the pressure varies materially during the night, and in consequence there is a waste of gas, and the light variable.

Improvements have lately been made in the mechanism of the Controller which makes them almost a perfect meter to each burner, and they are now offered to the public with more confidence than ever before.

Reference is permitted to the following named gentlemen—

Col. CHAS. ROOME, President Manhattan Gas Company, N. Y.
C. H. SANDS, Esq., President Metropolitan Gas Company, "
J. H. ADAM, Esq., President New York Gas Company, "
PETER COOPER, Esq. Cooper Institute, "
JOHN A. DUFF, Esq. Olympic Theatre, "
GEO. H. KITCHEN, Inspector of Gas Meters, N. Y.
A. L. BOGART, Esq., Gas Engineer.
Col. J. A. SABATTON, Engineer Manhattan Gas Company.
Col. A. J. WHITE, Engineer Metropolitan Gas Company.
J. K. SIMPSON, Esq., Engineer Cooper Institute.

Persons interested are invited to call at the Office, 111 Pearl street, where they can see the operation by pressure guage and test meters

M. L CALLENDAR, Agent

Office, 111 PEARL STREET.

THE AMERICAN METER CO.,

Organized under the General Manufacturing Laws of the State of New York.

SAMUEL DOWN, PRESIDENT. HENRY CARTWRIGHT, VICE PRESIDENT. RICHARD MERRIFIELD, SECRETARY AND TREASURER.

TRUSTEES.

SAMUEL DOWN. WILLIAM HOPPER, R. H. GRATZ. HENRY CARTWRIGHT, RICHARD MERRIFIELD.
THOMAS C. HOPPER, *Superintendent at Philadelphia.*

This Company is now prepared to furnish WET AND DRY GAS METERS, STATION METERS, GOVERNORS, PRESSURE INDICATORS & REGISTERS, SERVICE and METER COCKS, and all other articles in their line appertaining to the use of Gas-Works.

The combination of Mechanical and Scientific Skill, and the long experience of the several members of the Company, is a sure guarantee of durability, accuracy and excellence of workmanship. Orders addressed

AMERICAN METER COMPANY,

512 WEST TWENTY-SECOND STREET, NEW YORK,
ARCH AND TWENTY-SECOND STREETS, PHILADELPHIA,
No. 23 WEST STREET, BOSTON, will meet with prompt attention.

HARRIS & BROTHER, PRACTICAL GAS METER MANUFACTURERS,

Continue, as heretofore, at their old Establishment, **No. 1117 CHERRY ST., PHILADELPHIA,** to Manufacture

WET AND DRY GAS METERS and all kinds of GAS APPARATUS, and furnish all articles appertaining to the use of Gas Works ☞OUR WORK WARRANTED—Satisfaction Guaranteed. Orders respectfully solicited, and promptly attended to by

HARRIS & BRO., No. 1117 Cherry st. Phila.

Messrs. Harris & Brother. Philadelphia Gas Works, February 14, 1857.

Dear Sirs—I take great pleasure in stating that we have found your meters to register with entire correctness, and to be generally of very good quality; the number furnished by you to these works is over 5,000.

JOHN C. CRESSON, Engineer.

Office of the Gas Light Company of Augusta, Ga., March 6th, 1858.

This is to certify that having used meters manufactured by Messrs. Harris & Bro., for the last nine years, we do not hesitate to state they have given entire satisfaction in point of workmanship and accuracy of registeration; they are surpassed by none, and equalled by few manufactories in the Union; we have used meters made by other establishments, but our preference is in favor of those made by Harris & Bro., of Philadelphia, Pa

G. S. HOOKEY, Superintendent of the Gas Light Company of Augusta, Ga.

Messrs. Harris & Brother, Philadelphia. Philadelphia, March 4, 1858.

Gentlemen—We take great pleasure in bearing our testimony to the very superior character of the meters we have received from your establishment. We have always found the workmanship all we could desire, while the accuracy and reliability of their measurement have always been satisfactory. We have used meters made by other parties, and none have given as entire satisfaction as those received from you. We are, gentlemen, very truly, yours, BIRKINBINE & MEARS.

Messrs. Harris & Brother. March 14, 1857.

Gentlemen—For the last ten years we have used in the Philadelphia Gas Works, meters made in your factory, and take pleasure in expressing my opinion as to their correctness. On several occasions I have taken your meters apart, and found the materials used in the manufacture of the same to be as fine quality as is used in those imported from Europe, or made by any of the manufacturers in the United States.

Respectfully Yours, GEORGE WILGAND,
Inspector of GasFittings, Philadelphia Gas Works.

Glycerin for Gas Meters.

This article is superior to any fluid ever before used for Wet Meters, and we cannot better set forth its advantages than by giving the following letter from the Superintendent of the Co ington Gas Co. The superiority of our Glycerin over all others in the market, for this purpose, is admitted by every Company that has used it. We have sold, the past winter, to the Cincinnati Gas-Light and Coke Co.; to the Gas Companies of Covington, Ke.; Dayton, Springfiel , Portsmouth, Urbana, and Piqua, Ohio Richmond, Ind., and Buffalo, N. Y, to whom we refer.

Glycerin is much cheaper than Whisky is now, or likely to be ar eafter, and not evaporating, greatly increases the economy of its use.

OFFICE OF THE COVINGTON GAS-LIGHT CO.
COVINGTON, KY., Feb. 18, 1864.

MESSRS. W. J. M. GORDON & CO.:

Dear Sirs,—It affords us great pleasure in testifying to the superiority of the Glycerin Fluid purchased from you for filling the Wet Meters now in use by the Covington Gas-Light Company.

The difficulty of finding a non-evaporating and anti-freezing mixture for Wet Meters, has, in my opinion, been overcome by the use of your Glycerin Fluid.

I have had it in constant use for the past four months, and during that period the thermometer has ranged as l ow as 14o below zero, and after careful examination, I have found the fluid in the same condition as when first put in the Meters, and without the slightest discoloration.

Its non-evaporating quality does away with the hitherto una voidable expense of filling the Meters monthly, and renders Wet Meters no longer objectionable.

In fact, I can cheerfully recommend it as being cheaper and better than any other Fluid or Mixture now in use.

Very respectfully,
S. S. STRATTON, *Sup't Cov. Gas Co.*

We have been engaged in Manufacturing Glycerin the past six years, and from our advantage in material and the large amount we make, are enabled to offer it lower than any manufacturer in this country. We will be pleased to quote prices or to give further information.

W. J. M. GORDON & BRO.,
MANUFACTURING
CHEMISTS & DRUGGISTS,
N. E. Cor. Central Avenue & Eighth St.,
Laboratory, Miami Canal, bet. Third & Fifth Sts.,
CINCINNATI, O.

BROWN'S

PATENT BABY TENDER.

THE BABY-TENDER

Is the most complete and useful Nursery Invention of the age. From a charming Spring Cradle, it is easily and almost instantly converted into either of the following articles namely:

A Reclining Couch, for children to young to sit alone.
A Spring Chair.
A Baby Walker, attractive and useful.
An Ottoman, for the parlor or dining room.
A Hobby-Horse, for children under five years.
A Baby-Jumper, for security, exercise and amusement. (See cut)
A Baby-Horse, or, when elevated,
A High Chair, for the table.
A Nursery Chair.

The motion of the Baby-Tender, which is vertical and noiseless, is derived from a Spiral Spring in the Ottoman; and, unlike that of the common Rocking or Swinging Cradle, is in the highest degree healthy, delightful and soothing. It relieves the mother from the hardest part of baby-tending.

Prices from $25 to $50.

AGENTS WANTED.

Terms cash.

When packed the Baby Tender alone measures seven cubic feet, and weighs about one hundred pounds. The horse adds about one-fourth to the weight and measurement.

☞Send for Descriptive Catalogues.

BABY-TENDER MANUFACTURING COMPANY.
939 Broadway, N. Y.

New York, April 18th, 1864.

* * * * * *

We respectfully invite your attention to and consideration of the justly celebrated and reliable remedy for DYSPEPSIA, HEARTBURN, DEBILITY and PROSTRATION. The Proprietors are proud to acknowledge the unparalleled success which has attended the sale of their valuable preparation, known in nearly every portion of the civilized world as the

"GOLDEN BITTERS."

We risk nothing when we term them a *valuable preparation*, for they are one of the few articles of the present day which are not a humbug; and we are willing and able to satisfy any person or persons who will call upon us, that the celebrated "GOLDEN BITTERS" are a genuine *bona-fide hygienic* article. It is the wish of the proprietors that the virtue of the article be tested before condemning. A decision of their merits by any one who has tried them, is worth a million of purchased bogus testimonials.

For Creating a Healthy Appetite

they are invaluable, and are unequalled as a TONIC. They are mild in their action, and operate by giving *vigor* and *strength* to the system,—not by any change they produce in the solids, but through the medium of the living principle.

They are Purely Vegetable,

being composed of Gentian Root, Calamus, Sassafras, and many other remedinl agents of the Vegetable world, all preserved in Jamaica Rum and Sherry Wine.

As a Beverage

They are the most *wholesome*, *invigorating* and *palatable* stimulant ever offered to the public. And the fact of their being prepared chemically and scientifically, precludes the possibility of a bitter, unpleasant taste, common to Bitters generally offered for sale. We especially recommend them to LADIES, and particularly to those suffering from

DEBILITY, WEAKNESS, AND PROSTRATION.

Half a wine glass of these "Bitters" three or four times a day, will produce a remarkable healthy change in persons greatly debilitated.

The "Golden Bitters" have been tried and not found wanting. They are put up in our own *Patent* quart bottles, and for sale by Druggists, Grocers, &c., throughout the world. Each bottle bears a fac-simile of the signature of Hubbel & Co.

GEO. C. HUBBEL & Co., Sole Proprietors,
CENTRAL DEPOT, American Exp. Building, New York.

THE GOLDEN BITTERS.—We are not an advocate of stimulants of an alcoholic character; indeed we deprecate this "daily tonic" idea—this "morning toddy" which we see offered in all sorts of shapes as a recuperator, invigorator, revitalizer, &c. As a rule all artificial stimulants are dangerous remedies, and must be taken into the system as you would mercury or arsenic, in very small doses. But we have had an opportunity to try the now well-advertised article known as Hubbel's Golden Bitters, and are frank to say that where the system needs building up, where a stimulant is required to aid nature in restoring a lost appetite and infusing a vigorous action to the debilitated functions, we can recommend these Bitters. Hubbel's Golden Bitters are evidently intended to improve the debilitated human system, rather than to tickle the palate, and are, therefore a harmless and safe remedy o keep in the house.—*New York Weekly Day Book.*

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CHEAPER THAN COAL OR WOOD.

The "EAGLE" Gas Heating
STOVES,

Positively guaranteed free from Smoke or Smell.

Will Heat Offices, Parlors, Dining, Sleeping, and Bath Rooms. Also,

The EAGLE Gas Cooking
STOVES & RANGES,

Will BOIL, BROIL, ROAST, BAKE, TOAST,

STEW, and HEAT IRONS

The EAGLE GAS STOVES and RANGES have been in use for over Three years, and are found to be the most SIMPLE, COMPLETE and PERFECT Arrangment for HEATING and COOKING, in every respect, ever invented, and to do the Work with LESS TROUBLE, in LESS TIME and at LESS EXPENSE than any Coal or Wood stove.

Their WONDERFUL NEATNESS, CONVENIENCE and ECONOMY can be seen at a glance.

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COAL OIL STOVES,
For Cooking and Heating.

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EAGLE GAS STOVE MANUFACTURING CO.
No. 474 BROADWAY, N. Y

☞The Company have descriptive Catalogues, which will be sent or delivered, upon application for them.

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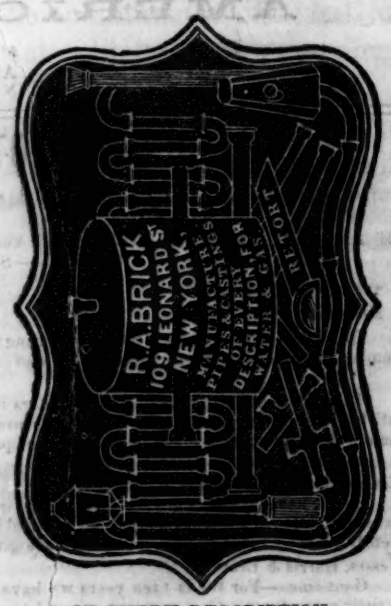

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